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Male Attitudes in Burkina Faso

Family Planning in a Peruvian Context

Gandhi on Improving India's Program

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UPDATE

HIV in One African Hospital

Since the identification of the first case of AIDS in Malawi in 1985, the number of men and women diagnosed as being infected with the human immunodeficiency virus (HIV) has risen steadily. A study at Zomba General Hospital, a 300-bed facility in Malawi,[1] finds that over a two-year period, 352 cases of HIV infection were diagnosed. The number of cases identified each month has climbed steadily since 1986, when regular serologic testing of suspected cases of infection began: From September through December of that year, fewer than five cases were seen each month; in contrast, from August through October 1988, at least 30 cases were identified each month. The infected individuals were about equally divided by sex—171 men and 181 women. The men were 31 years of age, on average, while the mean age of the women was 24. About one-third of those infected had been admitted because of tuberculosis, while one in six had symptoms of severe wasting (known as "slim disease"), such as chronic diarrhea and weight loss. The investigator concludes that if the number of cases continues to increase, the effects of HIV infection will soon be the most common cause of hospital admission for adults in Malawi.

1. P. A. Reeve, "HIV Infection in Patients Admitted to a General Hospital in Malawi," *British Medical Journal*, **298**:1567, 1989.

Curing Diarrhea Won't Stop Malnutrition

Programs to control childhood diarrhea save lives, Bangladeshi researchers find, but they cannot be expected to have a substantial impact on the degree of malnutrition found among children.[1] While the young children studied tended to lag in growth during episodes of diarrhea, they generally made up the difference with slightly faster growth later. On the other hand, all of the children, regardless of whether or not they had had diarrhea, gained weight at only three-quarters of the ideal rate. The investigators conclude that "efforts to control or treat diarrhea should not be expected to reduce the prevalence of malnutrition. . . . In poor communities, children are malnourished mainly because they do not get enough food, . . . not because they suffer from diarrhea."

1. A. Briend et al., "Are Diarrhoea Control Programmes Likely to Reduce Childhood Malnutrition? Observations from Rural Bangladesh," *Lancet*, II:319, 1989.

Assembly-Line Sterilization

One Indian physician has, in the course of 10 years, performed 250,136 laparoscopic sterilizations. Reporting on his experience in the *British Journal of Obstetrics and Gynaecology*, Pravin V. Mehta describes having sterilized 40–50 women per hour in special sterilization camps, with high levels of effectiveness (a failure rate of 0.1 percent) and low levels of associated mortality (4.8 deaths per 100,000 procedures).[1] Furthermore, rates of reported surgical and postoperative complications were no greater than those in other large studies of female sterilization. The physician concludes that since demand for sterilization in India far exceeds the ability of physicians to perform the operation, more doctors ought to study his approach. A British family planning expert, John Guillebaud, who observed Mehta's technique, comments that "if the main criteria of success of a mass sterilization program are safety, efficacy and cost-effectiveness, then Dr. Mehta and his team are to be congratulated."[2] However, he notes several reservations, the greatest being the "apparent paucity of counseling, lack of a human touch during the surgery and the risk of cross-infection." Nonetheless, he concludes that although the above deficiencies are important, they can easily be remedied.

1. P. V. Mehta, "A Total of 250,136 Laparoscopic Sterilizations by a Single Operator," *British Journal of Obstetrics and Gynaecology*, **96**:1024, 1989.

2. J. Guillebaud, "Mass Laparoscopic Sterilizations," *British Journal of Obstetrics and Gynaecology*, **96**:1019, 1989.

Infectious Cervical Cancer

The hypothesized link between genital infection and cancer of the cervix, as well as the potential of barrier methods for preventing cervical cancer, has received further support from a U.S. case-control study involving nearly 800 women.[1] Women who had had 10 or more sexual partners were nine times more likely to have been diagnosed with carcinoma in situ or invasive cervical cancer than were those with one or no sexual partner, as were women whose regular partner had had 10 or more sexual partners. Women with a history of herpes infection were three times more likely to have had cervical cancer. On the other hand, women who relied on spermicides as their contraceptive method were almost 60 percent less likely to have had cervical cancer. Among women who had had more than one sexual partner, condom users were half as likely and diaphragm users one-third less likely to have had cervical cancer.

1. M. L. Slattery et al., "Sexual Activity, Contraception, Genital Infections, and Cervical Cancer: Support for a Sexually Transmitted Disease Hypothesis," *American Journal of Epidemiology*, **130**:248, 1989.

Health Care in Rural India

The credibility of government health services in rural India is "fairly low," according to a case study conducted in a small village in rural Uttar Pradesh, in northern India.[1] The researchers who conducted the study found that the nearest primary health center (about 2.5 km from the village) was in poor physical condition and

was rarely open during its posted hours; as a result, most villagers refused to go to the center. A civil dispensary located in the village itself was also dilapidated and lacked supplies: The male medical officer who ran the dispensary said that he could no longer give out condoms because the expiration date had passed and he had never received a new supply. A health subcenter staffed by a trained nurse and a traditional birth attendant and established in the village six months before was hardly ever open, and the nurse was said to have charged village women for assisting during delivery, even though her services were supposed to be free of charge. The only health care providers readily available to the villagers were untrained private practitioners who used herbs and traditional medicines. Ironically, they appear to have been so successful at treating minor ailments, the investigators argue, that their services are probably more cost-effective than those provided at government facilities. The evaluators suggest that the Indian government consider training these private practitioners to dispense contraceptives and provide other simple kinds of health care.

1. M. E. Khan, R. Anker and S. K. Ghosh Dastidar, "Access to Health and Family Planning Services in Rural Uttar Pradesh: A Micro-Level Evaluation," *Journal of Family Welfare*, Vol. 35, No. 3, Mar. 1989, p. 3.

Risk Factors for AIDS

Among Kenyan men who had contracted a sexually transmitted disease (STD) from a prostitute, those who were not circumcised were eight times more likely to have developed HIV infection than were circumcised men, according to a study of partners of infected Nairobi prostitutes.[1] Overall, 17 percent of 422 men who were treated for an STD after having visited one of about 1,000 Nairobi prostitutes being studied by health authorities developed HIV infection. (At the time, 85 percent of the prostitutes whom they had visited were infected with HIV.) Besides circumcision status, two other factors had a great impact on the chance that the men would be infected with HIV: Those with genital ulcers were almost five times more likely to have developed an HIV infection than were those without such ulcers, and those who said they regularly visited prostitutes were three times more likely to be infected with HIV than were men who had been to a prostitute only once. Further analysis confirmed the importance of circumcision and genital ulcers: Only about three percent of circumcised men with no genital ulcers developed antibodies to HIV (an indication of infection), compared with 24 percent of uncircumcised men with no genital ulcers and 53 percent of uncircumcised men with genital ulcers. The investigators suggest that besides educating people to avoid having intercourse with those likely to be infected with HIV and promoting the use of barrier methods of contraception, lowering the prevalence of genital ulcers in Africa could help to reduce the rate of HIV infection.

1. D. W. Cameron et al., "Female to Male Transmission of Human Immunodeficiency Virus Type 1: Risk Factors for Seroconversion in Men," *Lancet*, II:403, 1989.

Sisterhood Is Powerful

The first field test of a new indirect method of estimating maternal mortality in a population-based survey proved very successful, raising hope that rates of maternal death can be determined with far greater accuracy than is now possible.[1] The technique, called the "sisterhood method," involves asking survey respondents about their siblings and determining how many of their female siblings have died, and under what circumstances. The proportion of adult sisters who have died during pregnancy, childbirth or the immediate postnatal period can then be used to calculate an overall maternal mortality rate for the region. When the method was tested in six Gambian villages, investigators calculated a maternal mortality rate there of 1,005 maternal deaths per 100,000 live births. This estimate was very similar to the rate derived from a 25-year longitudinal study carried out in the Gambia starting in 1951. Thus, a technique that can use data collected in a single survey may provide estimates comparable to those derived from a much more expensive, long-term study.

1. W. Graham, W. Brass and R. W. Snow, "Estimating Maternal Mortality: The Sisterhood Method," *Studies in Family Planning*, 20:125, 1989.

AIDS Fear and Knowledge in Botswana

The vast majority of citizens in Botswana are afraid of AIDS, according to a series of surveys conducted in that country, but some groups appear less willing than others to change their behavior to lessen their risk of HIV infection.[1] Samples of more than 1,500 citizens and over 300 students were asked a series of questions about AIDS. Anywhere from 83 to 87 percent said that they feared AIDS. However, 75 percent of students and 67 percent of literate nonstudents said that they were "doing something" to avoid infection, compared with only 36 percent of illiterate respondents; the proportions who said they had changed their own sexual habits ranged from 58 percent of literate nonstudents to 38 percent of illiterate respondents. Condom use was more common among students and literate nonstudents than among illiterate respondents. The researchers conclude that government educational campaigns have clearly been successful in making Botswanan men and women more aware of AIDS, but they have not convinced enough people to take measures to reduce their risk of contracting HIV infection.

1. G. Ahmed and G. N. Shastri, "People's Fear of Catching AIDS in Botswana—What They Are Doing to Prevent It in Society," paper presented at the biennial meeting of the International Union for the Scientific Study of Population, New Delhi, India, Sept. 20–27, 1989.

Calcutta Success Story

A large-scale outreach program established in 1986 has made remarkable progress in promoting contraceptive use and child immunization in the slums of Calcutta. A World Bank evaluation notes that two years after the program was established, 39 percent of women of reproductive age in the area were using modern contraceptives, and 50–65 percent of children were immunized against various diseases.[1] The evaluation attributes the program's success to a number of factors: Fieldworkers' duties are limited to what is reasonable and feasible, and worker-client ratios are kept low; furthermore, fieldworkers are recruited from among the slum-dwellers themselves, an essential strategy if local residents' skepticism and suspicion are to be overcome. The development of defined work routines, the provision of in-service training and the assignment of reasonably few workers to each supervisor were also important factors in the program's success. The evaluation concludes that if such a program is to be duplicated successfully elsewhere, those implementing it should keep in mind that "the interests of the poor may best be served by a lowering of policymakers' and program implementers' sights toward the daily realities of work in villages and slums, and the specific detail of designing [practical] jobs and providing adequate support for fieldworkers and community volunteers."

1. R. Heaver, *Improving Family Planning, Health and Nutrition Outreach in India: Experience from Some World Bank–Assisted Programs*, World Bank Discussion Paper No. 59, Washington, D.C., 1989.

Male Knowledge, Use and Attitudes Regarding Family Planning in Burkina Faso

"The men thought that women were largely ignorant of family planning, generally opposed to it and in need of education. In focus groups with women conducted as part of the same project, the women said the same thing about men."

By Therese McGinn, Azara Bamba and Moise Balma

Summary

A Knowledge, Attitudes and Practices survey of 603 men in Ouagadougou, the capital of Burkina Faso, revealed that 75 percent of men knew of at least one modern contraceptive method if they were prompted with a brief description of the method, and 90 percent recognized at least one modern or traditional method. Twenty-five percent of men could cite at least one modern or traditional method without any prompting. Nearly 19 percent of the men had used a modern method, mainly condoms, at some time; however, condom use appeared to be more closely associated with prostitutes and disease prevention than with birth control. Among nonusers, 64 percent said they might use a modern method in the future.

One in four of the respondents with children stated that they wanted no more, and this proportion increased as the number of children increased. The desired family size was surprisingly low, at around four for those who did not yet have four children. Eighty percent of men said they wanted more information about family planning, and 76 percent said they wanted this information for their wives. Of the 124 men who gave reasons for not wanting to use family planning, 31 percent said that it was bad for the health and 12 percent said that it was against their religion, but most cited personal reasons. Although attitudes toward family planning were, in general, very positive among men who participated in four focus groups, it was evident that many of them were misinformed about contraception. Many men expressed fears about the safety and permanence of modern methods. In addition, some men perceived that contraceptive use by women would threaten their fidelity in marriage.

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Introduction

A common assumption regarding traditional or modernizing societies is that men have little good to say about family planning. This assumption is perhaps most strongly held about men in Africa, where patriarchy has a long history and families have traditionally been very large. Yet, unfortunately, there is little data available either to support or refute this contention: Most of the research investigates women's views and behaviors regarding family planning.

However, some studies have been conducted on men's knowledge, attitudes and use of family planning in Sub-Saharan Africa. A qualitative study in 1984 of 25 men in Bobo-Dioulasso, Burkina Faso's second largest city, revealed high levels of knowledge of modern contraceptive methods but also showed considerable opposition to their use among Muslims on religious grounds.[1] In contrast, a 1982 survey of men in Khartoum, Sudan, showed strong positive attitudes toward family planning: Three-fifths of respondents whose wives were of childbearing age said they wished to use family planning services, although few were actually using a method.[2] Similarly, a study in the Danfa region of Ghana in the mid-1970s showed that 67 percent of rural men approved of family planning and 70 percent knew of at least one modern method.[3]

Other studies in Nigeria and Kenya[4] further support the observation that men's attitudes toward family planning are more positive than is often assumed. However, these data also suggest that, while men's knowledge of contraceptive methods is quite widespread, contraceptive use remains uncommon. This situation is attributed to social and cultural factors as well as to the general scarcity of affordable, accessible and high-quality family planning services.

This article summarizes findings from a Knowledge, Attitudes and Practices (KAP) survey and four focus-group discussions on family planning conducted among males in Ouagadougou, the capital city of Burkina Faso. Burkina Faso has one of the world's lowest per capita incomes—$150 in 1986.[5] Ouagadougou is the country's largest city, with a population of 442,223 according to the 1985 census.[6] The quantitative and qualitative data presented in this article were collected as part of an operations research project aimed at improving the delivery of family planning services in the city.

Methodology

We interviewed 603 male residents of Ouagadougou in their homes, in their workplaces or on the street during February 1986. Between 19 and 22 interviews were conducted in each of the 30 geographic sectors of the city. Four quota categories were targeted in this sample: age, literacy, birthplace (Ouagadougou or other) and occupation. The number of respondents predetermined for each category was based on the most recent data available for Ouagadougou at the time (the 1975 census), with modifications based on knowledgeable informants' opinions as to demographic trends since 1975.[7]

Overall, the actual sample corresponds closely to the desired breakdown for age, literacy and profession, but not for birthplace. In the sample, 50 percent of the men were aged 18–29, 30 percent were 30–44

and 20 percent were 45–60. This is representative of the Ouagadougou population, according to 1985 census figures that became available after the survey analysis was completed; census data show 53 percent, 33 percent and 14 percent for the same three age-groups, respectively.[8] For literacy and occupation categories, the actual sample percentages were within five percentage points of those desired: Forty-five percent were literate, 21 percent had agricultural jobs, 61 percent were otherwise employed (in textiles, tanneries, private offices or the public service sector) and 19 percent were not working. Only 29 percent of the sample reported their birthplace as Ouagadougou, as opposed to the desired proportion of 40 percent. However, 40 percent of the men said they had spent the majority of their childhood (through age 15) in Ouagadougou. Thus, although the sample was not randomly selected, we believe it accurately reflects the city's male population.

Two focus-group discussions were held before, and two more after, the KAP survey. The purpose of the presurvey groups was to assist the survey planners in formulating and pretesting some of the survey questions and to gauge reactions to the survey among men who had been interviewed during an earlier pretest. The postsurvey groups discussed some of the more interesting or surprising findings from the survey. Focus-group discussions provide a means of gaining insight into the thoughts and behaviors of a target group; in this case, they allowed more in-depth explanations of the survey data during analysis of survey results.

Six to 12 male residents of Ouagadougou who fit the selection criteria were asked by the focus group facilitators to participate in each of the focus-groups. One group was composed of men aged 20–40 who had been interviewed for the earlier pretest, two groups comprised married men aged 25–35 and the last group was composed of married men aged 35–50. Each session was held in a neighborhood site known to the participants, such as a nearby office or a community center; all discussions were recorded on audio tape and notes were made by a reporter seated outside the group circle. Three of the sessions were conducted in the most prevalent local language, Moore; the other was in both French and Moore. Initially the men were reluctant to express their own views; they had been accustomed to questioning and listening to people they viewed as authorities, not being listened to by them, but in the end, there were few nonparticipants.

KAP Survey Results

The survey showed the men's knowledge of modern family planning methods to be high, given the newness of the national program and the virtual lack of any information directed specifically toward men. Ninety percent of the men recognized at least one modern or traditional method, and 75 percent knew of at least one modern method (i.e., condoms, the pill, injectables and the IUD). Almost two-thirds had heard of condoms and a majority knew of the pill and injectables. More than 60 percent of the men also knew of the traditional methods of abstinence and rhythm. Other methods, such as withdrawal and douching, were less well-known.

However, as Table 1 shows, these figures represent "prompted" knowledge, that is, recognition of a method once it is described. When the men were asked, before prompting, to cite any method, only one-quarter were able to do so. The large difference between those who could cite a method spontaneously and those who recognized a method when prompted suggests that much of the men's knowledge is superficial; they have heard of the methods, but their knowledge beyond that is limited.

This conclusion is supported by the responses to a survey question asking why respondents did not use family planning even though they knew about it. Half of the men said that they did not know enough about contraceptives to actually use them. Further evidence of their limited knowledge was found among men in the focus groups. Most men could explain only the basic notion of contraceptive methods, and much of the information they had was inaccurate. For example, many believed that if a woman used contraceptives, she would never be able to have children again; the idea of family planning for spacing purposes was largely absent. Other fears were mentioned, including malformations in the newborn because of the pill and the possible loss of the IUD in the user's body.

The survey showed moderate levels of past use of contraceptives, with 19 percent of men having ever used a modern method (15 percent had used condoms). Only seven percent reported current use of modern methods; this included men who used condoms and those whose partner used the pill, with some men reporting current use of more than one method. The popularity of condoms was probed in the focus groups and it was found that condoms (and douching) were closely associated with prostitutes and used more for venereal disease prevention than for contraception. Thus, it is possible that condoms are rarely used to prevent pregnancies within marriage.

Use of traditional methods, particularly abstinence and rhythm, was greater than that of modern methods for both ever-use and current use. However, these practices have different meanings for men than they do for women. In the focus groups, the men agreed that, in general, abstinence is practiced by the women—men "take care of themselves elsewhere." Therefore, although a man may be abstaining from sexual relations with his wife, or with one of his wives, he may not be abstaining from all sexual relations, and thus may not be using abstinence as a method of contraception.

This highlights a general problem in measuring contraceptive prevalence among men. In many settings, men have several partners; in addition to the wife or wives, there may be longstanding or casual extramarital relationships. Each woman has her own history of use or nonuse of contraceptives, which confounds the status of the man as a user or nonuser. While a woman may also have multiple partners, her contraceptive status is unlikely to vary, since most methods depend on her. Thus, among men, knowledge and attitudes toward family planning may be more useful variables to study than contraceptive use.

Responses to attitudinal questions on the survey showed that the majority of men shared a largely positive view of family planning. When nonusers were asked whether they thought they might use a modern method in the future, almost two-thirds (64 percent) of those who had never used a modern method said yes. An even

Table 1. Percentage of males (N=600) who knew of, had ever used and were currently using a family planning method, by method, Ouadadougou, Burkina Faso, 1986

Method	Knowledge		Ever use	Current use
	Unprompted	Prompted		
Any method	24.6	89.7	54.8	45.3
A modern method	u	75.5	18.8	7.3
Condoms	7.6	63.8	15.2	3.8
Pills	13.9	55.7	5.3	3.0
Injectables	5.6	53.1	1.5	0.3
IUD	0.0	27.1	0.8	0.5
Abstinence	9.0	64.8	30.7	25.3
Rhythm	0.0	61.0	28.8	22.1
Withdrawal	0.0	25.8	5.8	3.2
Douching	0.0	20.3	2.7	1.3

Note: u = unavailable.

larger proportion (71 percent) of past users of modern methods replied affirmatively. The reasons the men gave for future use of contraceptives included protecting maternal and child health (38 percent), limiting the number of children (23 percent) and having insufficient financial resources (12 percent).

Outright negative views on family planning were relatively rare. Even among the 124 men who gave a reason for not wanting to use family planning in the future, only 31 percent said it was because family planning was bad for the health. Another 31 percent said that they were too old to use it, and 12 percent said it was against their religion. The remainder cited a variety of other reasons.

An indicator of the demand for family planning is the percentage of respondents stating that they do not want any more children. Overall, 24 percent of men with living children said they wanted no more children. Among those with one or two children, just three percent wanted no more, but among men with three or four children, 34 percent wanted no more, as did nearly half (42 percent) of men with five or more living children.

The desired family size (calculated by adding the additional children wanted to the actual number of living children) reported by the respondents indicated a demand for surprisingly small families within the African context. As Figure 1 illustrates, the desired family size was around four for those who did not yet have four children. For those who already had four or more, the additional number desired was quite small. A demand for additional family planning information was also evident from the survey. Eighty percent of the men wanted more information for themselves, and 76 percent of the married men wanted it for their wives.

Focus Groups

The men's responses to the KAP survey questions in no way assure that they will actually use contraceptives in the future or that they will have only the number of additional children they said they desire. Instead, their responses indicate, at a minimum, the absence of strong or overt negative attitudes toward family planning and, at best, an openness and willingness to consider family planning in their own lives. The focus groups confirmed the survey findings, and they delved deeper to discover some underlying concerns the men had about family planning.

One fear voiced by the men was being left childless: One said, "When you have only two or three children, at the end maybe it's zero because the children will all die." Another added, "If a woman takes something to stop having babies and if measles comes and kills all three of the children she has, the husband has to marry another woman." These fears refer to limiting births, and the focus groups confirmed the survey finding that this was what most men associated with family planning.

Some men mentioned the common practice of fostering, that is, taking care of children who are not one's own: For example, one man remarked, "If you limit your children to be able to take good care of them, and then they send you children for schooling because you don't have enough, there's no more family planning."

Another much discussed concern in the focus groups regarding contraceptives was that they would lead to promiscuous behavior by women: One participant said, "For me, there is no problem. But for others, if you talk about this to them, some will say, 'If I give this to my wife, maybe she will use it to her advantage and go out and do what she wants, do stupid things. . . .' "

Some of these fears were concealed and expressed as concern regarding dangers to the woman's health. Inconsistencies often resulted, however. For example, in discussing the practice of using contraceptives without any medical supervision, one participant stated: "If it's a young girl, it's good, it's normal because she has her life to live. But if it's a woman who takes pills without prescription, that will create problems. Because there are women who take [the pill] and whose husbands don't know."

One participant put it quite succinctly, protesting that if "a woman is protected, she is free. . . ." However, many of the participants, often the older ones, disagreed with this line of reasoning. One remarked: "If she wants to go out, whether she takes the pill or not, she can go out."

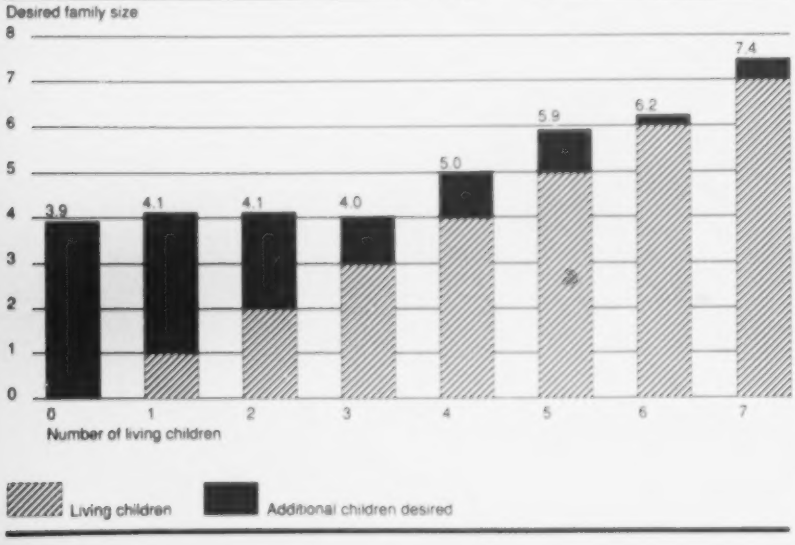
Another added: "It's a question of trust between the husband and wife. Even prostitutes can become serious when they marry, even if they continue using contraception. With women, it's something in the blood. How a woman behaves depends on the individual."

One went as far as to condone women acting on their own: "It's no big thing if a woman who already has three or four children takes something in the absence of her husband. It's a help to her husband."

Much of the group discussions centered on why men would want to use family planning. In the survey, economic pressure was not often cited, but in the focus groups this was by far the most discussed issue. Life was hard, the men said, and getting harder all the time. Giving their children the basics—identified as food, shelter, health care and schooling—was a deeply felt responsibility: "Some days I have only 100 francs in my pocket and that's not enough to feed my six kids. To go into the house with 100 francs. . . . I don't feel good. What can I say to my wife and children?"

"Before I was married, I had no prob-

Figure 1. Desired family size among males in Ouagadougou, by number of living children



lems—clothes and amusements were what concerned me. Now that I'm married, I don't sleep at night because I have to find a way to get money to feed the children and my wife," explained another.

A much repeated refrain among these men was that couples should only have children according to their means: "With three or four children, you can nourish them, school them and care for them when they're sick. If you can do this, they will be the great men of tomorrow."

The men thought that women were largely ignorant of family planning, generally opposed to it and in need of education. In focus groups with women conducted as part of the same project, the women said the same thing about men. This lack of awareness between men and women regarding the attitudes and desires of their spouses was also evident in a qualitative study in Bobo-Dioulasso.[1] In our study, both women and men said they rarely discussed sexual matters with their spouses; indeed, communication of any kind was limited. Each group strongly recommended that the government make efforts to inform the other of the benefits and means of family planning. Overall, neither men nor women were comfortable addressing the subject with their partners themselves.

Discussion

The quantitative and qualitative study among males conducted as part of an operations research study to improve family planning services in Ouagadougou showed fairly high levels of knowledge of family planning, although much of this knowledge appeared to be superficial. Use of contraceptives, particularly current use, was shown to be low. Moreover, at least some of the condom use was related to sexually transmitted disease prevention outside marriage rather than to fertility regulation within marriage. Nevertheless, the findings are quite promising in view of the scarcity of family planning services in Ouagadougou prior to 1985. Before the Ministry of Health initiated its public program, contraceptives were available only through relatively expensive private channels, such as pharmacies, and through some physicians. Thus, the men who obtained and used these methods (or whose partners did so) may be considered quite motivated.

The men in the study had definite ideas about optimal family size and their own fertility. The fact that substantial numbers of them flatly stated that they want no more children runs counter to the frequently held view that African men want as many children "as God will give." While these expressed desires will not necessarily translate into actual use in the immediate future, they do indicate a demand for fertility control among the respondents.

As with many studies of men in Sub-Saharan Africa in recent years, the Ouagadougou findings paint a generally positive picture of male attitudes toward family planning. They show that men are deeply troubled about household finances and the health of their families, both of which can be addressed through family planning. Moreover, they show that men are open to learning about and using modern contraceptives.

But men do have concerns about family planning. They fear losing their children to the all-too-familiar ravages of disease. They fear the new drugs and devices that are reputed to harm their users. They fear, probably correctly, that it will change the balance of social control between men and women.

What do these contradictory elements mean for Burkina Faso's national family planning program? And, since the mixed feelings shared by men in this study are likely to exist in many countries, how can the new family planning programs throughout Africa best address them?

First, policymakers should not dwell excessively on the issue, since, as in Burkina Faso, male attitudes may be more positive than is supposed. Family planning is advantageous to men as well as to women, and men can be relied on to recognize its benefits, such as easing their economic load and contributing to a healthier family. Working under the assumption that men are hostile to family planning may be the greatest problem of all.

Second, pertinent family planning information should be directed to men. Focus groups or other qualitative techniques can be used to understand the issues that concern men (or any other segment of the population) and the findings can then be incorporated into educational campaigns and counseling programs designed specifically for men. Such interventions have financial and personnel costs, however, and the decision to expend these usually scarce resources on educating men (or any subgroup) must be weighed against the potential difficulties they raise for the program. If the opposition is particularly vehement, if the society is intensely male-dominated or if the program relies heavily on male methods, an active educational campaign would be warranted. In the absence of these circumstances, however, the program may do best by targeting its messages to potential acceptors and letting the changing social climate alter unfavorable opinions over time.

Third and most important, program managers and policymakers should maintain the availability of family planning services and work to expand them. The best antidote to the current misunderstanding and lack of information is exposure and experience. Every new user sensitizes family members and friends through his or her experience and makes family planning more familiar to them. To ensure that a positive image is portrayed, the quality of care must be given as much attention as the quantity. In Burkina Faso and throughout Africa, family planning is much less controversial today than it was even five years ago, partly because policymakers, practitioners and the public have more experience with it. As services spread to cover all men and women who want to control their fertility, the practice of family planning might even achieve the exalted status of being considered routine.

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Resumen

Una encuesta sobre Conocimiento, Actitud y Práctica realizada entre 603 varones en Uagadugú, capital de Burkina Faso, reveló que, previa breve descripción de los métodos, el 75

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Investigating the Social Context of Fertility And Family Planning: A Qualitative Study in Peru

There is a widespread idea, held particularly by Peruvian men, that having many children is a sign of faithfulness in a woman; conversely, the use of family planning is strongly associated with infidelity.

By Alfredo L. Fort

Summary

Focus-group sessions conducted in 1986 and 1987 with Peruvian women living in two cities far from the capital indicated that women's control of their fertility is undermined by their low status in society and their ignorance of reproductive physiology. Contributing factors are their lack of any concept of planning for the future and a weak family planning program. Although there has been some increase in the use of modern methods of contraception, nearly half of all current users rely on traditional methods such as rhythm, which is often used in reverse and is therefore ineffective. Previous studies had singled out fear of side effects as the main deterrent to the use of modern contraceptives. However, the focus-group discussions revealed that women who were using modern methods were as fearful of harmful effects as women who were not using such methods. In fact, the women who were using modern methods were doing so because their dread of further pregnancies was even stronger than their fear of illness or death.

Although surveys had shown the preferred family size in Peru to be three, the focus groups revealed conditions that encourage women to have more children than they believe is ideal. Child mortality is still at a high level. Couples rarely discuss family size early in their marriage, if at all. Women would prefer to delay childbearing for 2–3 years after marriage, but feel they must have children immediately to please their husbands. Wives also fear their husbands' disapproval if they use explicit methods of contraception, because family planning is associated with infidelity and having many children, with faithfulness. In this context, family planning is used primarily as a means of limiting, rather than spacing, births.

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Background

Peru's birthrate dropped from 46.3 per 1,000 population in 1960–1965 to 36.7 per 1,000 in 1980–1985. The total fertility rate (TFR) declined slightly between 1977–1978 and 1984–1986, from 4.7 to 4.1 lifetime births per woman. Nevertheless, as is common in many developing countries, particularly those in Latin America, significant change has occurred primarily in the cities, which are expanding rapidly because of migration from rural areas. As can be seen in Table 1, data from national surveys carried out during the past decade have shown large differences in fertility rates between Peru's various geographical regions and Lima, the capital city. For example, the 1986 Demographic and Health Survey (DHS) revealed that the TFR among women living in Lima was 2.5 births per woman, compared with 5.4 and 6.0 among those living in the mountains and the jungle, respectively.

These surveys have also found a moderate increase in the use of contraceptives—particularly that of modern methods* (Table 2). For example, between 1977–1978 and 1986, the proportion of women relying on modern methods of family planning rose from 11 percent to 23 percent. Nevertheless, the so-called traditional methods of contraception still predominate. The 1986 DHS indicated that half of all current users rely on such methods; rhythm, the most prevalent method, is used by nearly as many women as the pill, the IUD and sterilization combined.

Table 3 (see page 90) shows the relative prevalence of the rhythm method in different geographical regions of Peru as reported in the DHS. For example, rhythm is less widely used than the more effective modern methods in Lima (20.6 percent vs. 33.2 percent) and in the jungle (10.9 percent vs. 16.6 percent), while in the mountains, the proportion of women using rhythm is almost twice that of women using the more effective modern methods (16.2 percent vs. 8.7 percent).

However, what respondents meant by "rhythm" is uncertain, because the few surveys carried out in Peru used closed-ended questions that did not describe the methods under consideration.[1] Other traditional methods, such as douches and herbs, although mentioned by small proportions of the DHS sample, are used throughout the country, even on the urbanized coast and in Lima. As with the rhythm method, there is a need for more research on the way these methods are used and the context in which they thrive.

Preliminary research and experimental programs in population planning were carried out in Peru in the mid-1960s. Most of these efforts ended with the advent of military rule, which lasted for 12 years. Since 1981, however, a joint project between the Pan American Health Organization and the Peruvian Ministry of Health, with support from the United Nations Population Fund, has been adding family planning services to the more general maternal and child health (MCH) services offered by state hospitals and health centers throughout the country.

Unfortunately, this program has been undercut by a lack of strong political commitment, reflected in the absence of clear

*Modern methods are defined as oral contraceptives, the IUD, sterilization, injectables, vaginal methods (such as the diaphragm and spermicides) and the condom.

targets for either population growth or contraceptive prevalence. The authority given to the program administration has varied from a low position within the MCH program to the nominally high position of a general directorate of family planning. As a result, the program lacks the stability and organization it needs to make substantial progress. Services remain concentrated in hospitals and urban health centers, and the supply of contraceptives has been irregular. Thus, progress in promoting the use of modern methods has been slow. In a 1982 assessment of family planning efforts in more than 90 developing countries, Peru's program was categorized as "weak."[2] An evaluation carried out by the National Population Council in five health regions of Peru estimated that in 1983, 7.3 percent of women of childbearing age became new acceptors through the program.[3] This estimate may be too high because of the inclusion of Lima, which had a rate of 9.2 percent, and the use of reduced catchment populations as denominators when calculating percentages in the inner health regions. In recent years, articles appearing in national bulletins of Peruvian family planning agencies have referred to the "ambiguity with which [our] population problem is managed"[4] and to the "catalepsy" of the National Committee on Population, which was set up to support population activities in Peru.[5]

One important obstacle to the acceptance of modern contraceptive methods may be that the centrally organized and controlled program administration in Lima does not take Peru's cultural variation into account. Little is known about the beliefs and motivations that influence women in their decisions regarding fertility and childbearing, information that could be very helpful in efforts to improve the delivery of reproductive health services and education.

There are two issues in particular that should be explored further. One is that of "unmet need" for contraception among women who are either married or living in a consensual union.[6] A recent analysis of 1986 DHS data found that of four Latin American countries, Peru had the smallest decrease in unmet need during the last decade, and that the level of need among Peruvian women remains very high. Women commonly attribute their reluctance to use contraceptives to a concern about side effects, but it is possible that other powerful deterrents are also involved. An expressed desire to have no more children could conflict with underlying attitudes about family size and the childbearing process. A second question is why women seem to prefer to use family planning to limit rather than to space births.

Because of the complex nature of these questions, we chose to use qualitative techniques rather than a structured survey. Recent literature has reported the use of focus-group discussions in research related to population policy and family planning. For example, focus groups were used in a study of fertility transition in Thailand[7] and in research on family planning awareness, attitudes and practices in Mexico and Indonesia.[8] More recently, such discussion groups were included in studies on attitudes toward sexual and demographic education in Costa Rica[9] and on the factors responsible for nonuse of contraceptives among couples in Nepal who desired no more children (part of the DHS program).[10] We investigated the issues raised earlier in this article through a series of focus-group discussions in two Peruvian cities as part of a larger study investigating attitudes and values related to reproduction.

Methodology

The study was conducted in Cusco and Iquitos, cities representative of two distinct and understudied regions in Peru—the Andes mountains and the Amazon jungle, respectively. The study samples were selected from the shantytowns surrounding the cities, where poor living standards, unemployment and traditional rural family-formation patterns appear to be more common than elsewhere in Peru.

Women had to have at least three living children to be eligible for the study. They also had to be of reproductive age (15–49), currently married or in a consensual union, fecund, not pregnant and residing in a shantytown. In each city, the women who met these criteria were divided into three contraceptive-use categories: those who used modern methods, those who used traditional methods and those who had actually rejected contraceptive use or had never decided to use contraceptives (never-users). The criterion of having at least three living children was included to ensure that the participating women had had the opportunity to think about limiting the size of their family and to make categorization more accurate. In a society in which large families are the norm, it could be misleading to place a woman who had one or two children and had never used contraceptives in the never-user category. The cut-off point of three children was set according to the average number of children (2.7) preferred by currently married Peruvian women.[11] To identify any variation between younger and older women, we separated the participants in each user category into two age-groups: those younger than 30 and those 30 and over. There were two sessions, each with different participants, for each age-group, user group and region, for a total of 24 separate focus-group sessions, 12 in each region.

The modern-method users were the first group chosen at each location. Women attending the family planning clinic of the state hospital in each region who matched the criteria were asked to participate. Those who agreed were given an invitation sheet with the date, time and meeting place, along with a note indicating the nature of the discussion, its duration and the name of the moderator and stating that a small sum would be paid for transportation. Each focus group was conducted a few days after the invitations had been issued; previous experience had shown that holding a session too long after the invitations had been received resulted in

Table 1. Total fertility rates in Peru, by region, 1977–1978 Peruvian Fertility Study (PFS), 1981 Contraceptive Prevalence Study (CPS) and 1986 Demographic and Health Survey (DHS)

Region	PFS	CPS	DHS
Total	**4.7**	**4.5**	**4.1**
Lima	4.1	3.5	2.5
Coast*	5.2	5.1	3.8
Mountains	7.6	7.3	5.4
Jungle	8.1	8.0	6.0

*Excluding Lima.

Table 2. Percentage of currently married women using a method of contraception, by type of method used, 1977–1978 PFS, 1981 CPS and 1986 DHS

Method	PFS (N=5,061)	CPS (N=3,925)	DHS (N=2,899)
Total	**31**	**41**	**46**
Modern	**11**	**17**	**23**
IUD	1	4	7
Pill	4	5	7
Female sterilization	3	4	6
Injectables	1	2	1
Vaginal*	1	1	1
Condom	1	1	1
Traditional	**20**	**24**	**23**
Rhythm	11	17	18
Withdrawal	3	4	4
Other†	6	3	1

*The diaphragm and spermicides.

†Douches and folk methods (such as herbs). In the PFS data, this category includes abstinence as well.

Table 3. Percentage distribution of currently married women, by type of contraceptive used, according to region, 1986 DHS

Type of method	Total	Lima	Coast*	Mountains	Jungle
Most effective modern†	21.2	33.2	27.2	8.7	16.6
Rhythm	17.7	20.6	19.6	16.2	10.9
Other modern‡	1.7	2.6	1.4	1.4	0.3
Other traditional§	5.0	6.4	3.8	4.7	5.1
None	54.4	37.2	48.0	69.0	67.1
Total	100.0	100.0	100.0	100.0	100.0

*Excluding Lima. †The IUD, the pill, female sterilization, male sterilization and injectables.
‡The diaphragm, spermicides and the condom. §Withdrawal, douches and folk methods.

low attendance because the women forgot about the session or lost the information.

The focus groups were held in a small room at the state hospital. At the suggestion of local leaders and community health workers, we scheduled the focus groups to begin in the late afternoon and to finish by early evening. Each session lasted approximately two hours and was conducted by the principal investigator. Although the sessions were conducted by a man, the women discussed a wide range of matters related to sex and reproduction without embarrassment.* We made a special effort to create a casual and friendly atmosphere, to reassure participants of the value of each individual opinion, and to stress the importance of a nonjudgmental attitude.

The traditional-method users and never-users were made up of women from two shantytowns chosen at random from those where the modern-method users lived. There were no obvious distinctions among the shantytowns involved. Participants were recruited with the help of a woman from a local mothers' club who was given some training on the selection criteria. Recruitment for these two groups was carried out house to house, and meetings were held near where the women lived, either in the community center or in a participant's home. The sessions were conducted during roughly the same period as those involving the modern-method users.

The study was carried out in December 1986 in Iquitos and in March 1987 in Cusco. All sessions in each region were completed within three weeks. A total of 173 women participated. Of these, 77 were from Iquitos (an average of 6.4 women were in each focus group) and 96 were from Cusco (an average of 8.0 women were in each session). The average age of those in the under-30 group was 24.7 years in Iquitos and 24.1 in Cusco; the average age of those in the 30-and-over group was 33.4 and 36.1, respectively.

The investigator used a discussion guide comprising some 30 questions to direct the focus groups. The first section of the guide explored characteristics of family formation, such as the childbearing process and relationships between husbands and wives. The second part was concerned with attitudes toward and experience with various methods of contraception. The final section dealt with abortion. All sessions were tape recorded, and notes about special characteristics of respondents were taken at the same time to allow matching of answers on the tape with specific participants.

Family Formation

The section of the discussion devoted to family formation explored age at first union, family size, the value placed on children and the husband-wife relationship. Each participant was asked to specify her ideal and actual age of union. The average age at union among all participants was 17.7 years. Women in Iquitos not only expressed a desire for earlier unions, but did in fact enter unions earlier than their counterparts from Cusco. Among women who were under 30, the average age at union in Iquitos was 16.6 years, while in Cusco it was 17.5 years; among those who were 30 and older, the average age at union was 17.6 years in Iquitos and 18.6 years in Cusco. Within each region, however, there were no differences between age-groups and between user groups. The norm of earlier unions in Iquitos could explain the higher fertility rate found by the DHS among women in the jungle, in spite of a rate of contraceptive use slightly higher than that found in the mountains.

The participants acknowledged that early union disrupts adolescent life and education and that it leads to increased fertility. They felt that early marriages could lead to marital failure because of lack of experience; there is a pervasive idea that women should know "how to serve [their husbands] well." The group discussions revealed a very common scenario for the start of family life: that of the young woman who is made pregnant by the first man she goes out with. Adolescent women rarely receive much guidance or sex education from their parents: Their queries about how offspring are born are met with incorrect and evasive answers, such as "Babies come from airplanes" or "Baby pigs are born from their mother's mouth."

Ideal intervals between union and first birth were also explored in some of the focus groups, particularly those in Iquitos. Among the participants who discussed this issue, the ideal gap was 2–3 years; these women said, however, that union and pregnancy often occurred almost simultaneously. Delay in having children was thought to be contrary to men's wishes, and women felt their husbands would leave them if they did not bear children soon after union. When age differences were taken into account, the women in each group had a similar number of children. However, the average ideal family size of women in Iquitos was higher than that of the women in Cusco (3.2 vs. 2.3). This difference was reaffirmed by their respective definitions of a large family: six children for the women in Iquitos and four or five for those in Cusco.

During this part of the discussion, several important factors became evident. First, the low status of women in both the family and society makes it difficult for women to exercise control over their own fertility. Some of the modern-method users said that they had gone off with a man to escape parental oppression. As someone in the older group said, however, that was "getting out of one cage to enter another." Moreover, in all the groups, women spoke of childbearing as inevitable. Once they begin having children, they said, "the machine starts" and "from one, one goes into having a lot." A third factor that emerged from these discussions was a lack of any concept of planning. These women live an everyday life in every sense of the word: Most wages are earned and spent daily, and goods and foods are purchased at need. Reproduction follows the same pattern, with pregnancies too being unplanned. The women said that they were "taking care" (practicing some form of contraception) "but [the children] are increasing." The belief that fertility is beyond their control could help explain their lack of interest in contraception for spacing, rather than limiting, births.

The issue of family size is closely tied to

*Previous experience had shown that women in these areas of Peru were very enthusiastic about attending meetings at which they might learn something useful. Their eagerness to attend a *charla* (talk) and receive something from it seemed to offset any reservations they may have had.

the value placed on children. In the shantytowns, children apparently have a better chance of survival than in rural areas. Nevertheless, some 20 percent of the babies born alive to women who participated in the focus groups were dead by the time of the sessions. This high rate of child mortality is one reason why women with at least three children might still want to have more. Companionship and financial security in old age are also important motivations in a country where organized social security plans reach only a small proportion of the population, mainly those living in urban areas. Support for aging parents comes primarily from sons, as most paying jobs in Peru are held by men. Therefore, when the participants were asked what sex distribution they would prefer if they were to have only three children, the majority specified two boys and one girl. Moreover, they said, boys "land on their feet," while girls "suffer more" and have to bear with "children and the home workload." Girls will, nevertheless, later provide company for their mothers, visiting them and helping them with the housework. This role differentiation is an extension of task assignments at home: A boy typically fetches water, runs errands or "helps his father," rarely doing any kind of washing or child-minding; girls, on the other hand, start with kitchen work at three or four years of age and then move on to baby-sitting and laundry.

In a further effort to understand the value of children, the investigator then explored attitudes about childless couples and infertile women. The participants condemned couples who choose not to have children as "irresponsible" and "egoistic." They compared a childless home to "a garden without flowers" or "a nest without birds." To these women, children seal and justify unions ("the reason to get married is to have children"), and marital dissolution is an almost automatic consequence of childlessness. They also frequently mentioned the pressure men exert on their wives to have children. If a wife fails to do so, they said, the husband will "find another [woman] with whom to have that child." Questions about infertile women elicited expressions of deep sorrow and pity. The participants saw such women as persons who were experiencing great frustration and whose marital lives were endangered.

It was clear from the group discussions about husband-wife relationships that couples rarely talk about family-size preferences early in their marriage. Family size is discussed, if at all, "afterwards, when there are four or five, only then." What occurs is that the mother eventually gets "fed up" and seeks help. In this context, family planning is usually seen not as a way of spacing, but as a way of bringing fertility to an abrupt end ("we had enough"). Except for the spouses of modern-method users, husbands usually do not participate in this decision.

The women blamed their husbands for insensitivity to the family's needs ("they do not care about numbers"). Indeed, they felt that men see children as a way of keeping their wives at home. In general, the participants saw children as "enslaving" them. Furthermore, a woman who has many children is seen as a "señora" (married, a lady), an image that is believed to prevent her from being approached by other men when she goes out. This appears to be related to the widespread idea, held particularly by men, that having many children is a sign of faithfulness in a woman.

Conversely, family planning is strongly associated with infidelity. Women themselves sometimes adopted this attitude. As one participant said, "Why should I 'take care' if I am not having children from other men?" But the participants also related family planning to "going out," to "dialogue" between women and to "change." They see mothers' clubs, health centers and other communal institutions as schools of a sort. Men ridicule women's participations in such activities, according to wives, "because it is not agreeable to them."

Other differences in roles revolve around cooperation and conflict at home. Although the women started out by justifying their husbands' refusal to help with family duties, further discussion revealed that they were very frustrated by the excessive amount of work they had to perform at home, an injustice that was not acknowledged by men. The participants emphasized the contrast between their confinement and their husbands' absolute liberty; most of them could not even discuss the matter with their husbands, let alone change their minds. The husbands of some of the younger women who were using modern methods did seem to have a more cooperative attitude, however.

Family finances reflected another facet of the husbands' control. Because the men dole out small amounts of money daily, their wives are not able to save any spare cash for hairdressing or clothes, which they feel they need to "keep" their husbands. However, this system does provide them with a unique opportunity for daily socializing as they shop in the local markets.

The women see the liberty of their partners as providing opportunities for affairs outside the home. A not insignificant number of the participants actually justified this as a reflection of men's "different nature," even saying that if a man is unfaithful, his wife is at fault for harassing him or for not "keeping smart enough." Such notions are part of an ideology that also holds it as basically wrong for a mother to go out freely and that "abandonment of [one's] children" is the ultimate shame. The limited efforts of some women to change their situation had encountered strong opposition from their husbands. A few of the participants said that employment of women was a possible way of improving the situation.

The last topic covered in this section was marital violence. The participants said that wife-beating was common, and that beatings usually occurred when a man had been drinking or when he was having affairs outside the home (which, they said, "alters his mood"). Some of the participants associated drinking with higher fertility, probably because of an increase in unprotected intercourse. Separations and abandonment, more common ways of resolving conflict than divorce, are not infrequent.

Family Planning Services

The second section of the discussion explored experience with the government family planning program, attitudes and knowledge about contraception and experience with contraceptive methods. Only the users of modern and traditional methods had had experience with the family planning program based in the state hospital. Because the two groups of women made similar comments about the program, their remarks were not separated. They criticized the service for delays, disorganization and corruption. They rated the attention they received as generally good, although they had some complaints about being rushed through and being treated with insensitivity and hostility. They resented the lack of privacy in the examination rooms, complaining that "everybody sees us" and "there is not a door closed." In all the groups, the women agreed that they would prefer for women doctors to perform internal examinations because they saw them as "more understanding" and "gentler" than men.

In Cusco, the family planning services were inconveniently combined with prenatal services. There were no structured family planning talks for women admitted to the hospital, and doctors and nurses

advised patients personally. This situation was conducive to corruption: In some cases, doctors had refused to insert an IUD at the clinic, saying that such devices did not exist, but later referred the patients to their private practice and charged a fee for insertion.

The participants agreed that there were practically no family planning services available in rural areas. They requested that clinic hours be extended into the afternoon, saying that there was a huge amount of housework to accomplish in the mornings, such as early preparation of breakfasts and packed lunches, daily marketing, baby-minding and cooking. In addition, the women themselves often went to work.

The participants said they received hardly any family planning information through the mass media, and very little through health centers, mothers' clubs or government programs. They found the amount of family planning information available to them sparse in comparison with the profusion of material and messages delivered for immunization campaigns.

Use of Modern Methods

In Iquitos, most users of modern methods participating in the discussions were using the pill, whereas in Cusco, the majority were using the IUD. These findings are similar to those on the relative method preferences found in the few surveys carried out in each area.[12] There were no major differences between the two communities in the amount or content of family planning information provided or in the availability of methods.

The participants were asked how they had first learned about family planning. In both Iquitos and Cusco, the most common way was through contact with government health institutions or personnel (most frequently after childbirth or curettage in a hospital or when attending a children's clinic). This was consistent with results of the DHS, in which government hospitals or health clinics were the most frequently identified source of current methods or information about methods. In Cusco, mothers' clubs, relatives and friends were also important sources. Overall, talks by program officers accounted for less than 10 percent of sources of information, a figure consistent with the limited efforts made to date in public education.

In general, women appeared to be using the modern methods correctly, although when they had first begun to use their method, they clearly had received very little information about it, the mechanism by which it worked and the side effects they might experience. Perhaps in part because of this lack of information, they had a long list of complaints and fears about harmful consequences of contraceptive methods. Women in areas in which a particular method was prevalent mentioned more side effects and fears related to that method than to other methods.

Given so many fears about dangerous side effects, why did these women continue using the modern methods? The women typically responded that pregnancy would have been worse than the side effects, citing the "sacrifice," the "pain" and the "heaviness" of pregnancy. One of the participants created a slogan that expressed the intensity of their feelings: "Better death than to have more!" The under-30 group made it clear that their determination to avoid further pregnancies was overriding their fears of cancer and death. Some said that they continued only because of their husband's support.

Use of Traditional Methods

Women who used traditional methods of contraception were able to name the more common modern methods, and sometimes even acknowledged their effectiveness. Nevertheless, they lacked knowledge about use and mechanism of action. Their fears of side effects were more intense than those of the modern-method users. They believed that if they used modern methods, they would be more prone to illness. According to one woman, their fears were engendered by the comments of dissatisfied users who "leave [the methods] when they are harmed." Some women defined an effective method as one that "doesn't harm me."

Women in both regions used a variety of traditional contraceptive methods. They had confidence in a method if they or someone they knew who used it had achieved an interval of two years without pregnancy. In Iquitos, the four most often mentioned were douches, *la regla* ("the period"), Chloromycetin™ (an antibiotic) and herbal beverages. In Cusco, on the other hand, *la regla* was the most popular method, followed by herbal remedies and douches. Some women preferred to combine two traditional methods rather than relying on one. This could reflect a lack of confidence in the effectiveness of any single method or might simply describe the usual pattern of use of traditional methods. Herbs were consistently found to be more prevalent in Cusco (the mountain town) than in Iquitos (the jungle town). This was an unexpected finding, because native tribes in the Amazon jungle are known to use herbal medicine for fertility. However, in Iquitos, the people are basically *ribereños*, dwellers of the river margins who have migrated to the nearest city, and not actually natives, who live deeper in the jungle.

Women using traditional methods had usually learned about these methods from family members, often their husband or mother, or from friends and neighbors. In the case of *la regla* only a few women had obtained information from a talk at the hospital or the school.

The group sessions indicated that the local population regards *la regla* as being equivalent to what we call the rhythm method. However, further discussion revealed that most users were, in fact, applying it in reverse—that is, they were having intercourse during the high-risk days surrounding ovulation. We found a widespread belief that the uterus "opened" during the menstrual period. This event was associated with fecundity, in the same way that the end of fecundity was signaled by the end of menstrual periods. Thus, this method entailed waiting to have intercourse until the uterus "closed." When these women were taught a simplified version of the method—to restrict intercourse to the periods of eight days before and after the menses—they used the method in reverse, waiting until eight days after the menses to begin having intercourse and avoiding intercourse beginning at about eight days before the menses. Some women would wait 10 or even 12 days after the menses before having intercourse, because they believed closure of the uterus could be delayed.

Other common beliefs seemed to reinforce this idea. In Cusco, women said repeatedly that sexual intercourse during the menstrual period was sure to result in pregnancy. A husband who "took care of" his wife would never "make contact" during the menstrual period. Such views were expressed not only by women who used traditional methods, but also by some current users of modern methods. Women do not bathe during menstruation, not only because they believe that there is an open wound, but also because they believe they could have "accidents" (pregnancies) if they carelessly swim in "bad waters." Another practice that seems to arise from this notion is that most herbs and remedies believed to affect fecundity are taken during, or around the time of, the menstrual period.

Some women did not consider *la regla* a method of family planning at all. In fact,

when first asked if they were "taking care to avoid getting pregnant or having more children," a not infrequent response was: "No, only naturally." Further questions revealed that they were using *la regla*. Periodic abstinence could be practiced regularly and in a context lacking specific birth limitation purposes. These alternative meanings must be taken into account when interpreting survey responses. Some respondents categorized as nonusers could, in fact, be practicing this "natural" method. In general, women seemed aware that *la regla* was not very effective and that they might be using the method improperly. They were dissatisfied because their husbands did not respect the period of "danger"; in any case, they believed the method was not adequate when used alone.

The focus-group participants seemed to feel embarrassed to speak about abstinence and withdrawal. Women who did comment said these methods were not much accepted or used by their husbands.

Throughout the sessions, particularly those in Cusco, women referred to a variety of local herbs used to delay pregnancies. Among the most popular were parsley, mallow, and field grass mixed with linseed. Other native plants, such as *allcoquisca, durazuillo, rahuar chunca* and *llampu jarma*, are usually taken as an infusion called *mate*, and are sometimes blended with lemon juice or water. The focus-group participants explained that fresh herbs "cool down the ovary" and "sterilize," whereas "warm things fertilize." This reasoning also explains their habit of drinking these infusions after letting them *reposar*, that is, leaving them out in the open during the night, when temperatures fall to a few degrees above freezing.

If they want to have a child, women stop taking the herbs for several months. Most women are not entirely confident that the herbs delay pregnancy, but they regard them as natural and free from side effects (although, according to one woman, too many fresh herbs can "give a cold, a chill").

The focus-group participants believed that douches act through the same mechanism as herbs. In fact, women use a preparation with mallow water or water with lemon juice for the douches, which are said to "cool down the womb." The women said that they restored fecundity by injecting calcium intravenously, an old custom still practiced in many rural areas. The burning sensation produced by the injection of calcium is associated with strength and healing. Women also take vitamins and honey to "warm up" the womb and restore fecundity.

Lemon taken alone, with infusions or medicines, or in douches is thought to exert a powerful effect on fecundity. Focus-group participants said its "sourness" has a spermicidal effect. It also "heals wounds [by] drying them." Here, the rationale seems to be that by diminishing menstrual bleeding, lemon juice impairs fecundity. The extreme acidity of the juice has given rise to a unique name used in the jungle: When people say a substance is *patco* (sour), as lemon is, they probably mean that its sourness affects fecundity.

In many parts of inner Peru, antibiotics can be purchased without a prescription. Chloromycetin™, a popular brand of chloramphenicol originally intended for the treatment of typhoid fever, is widely used by mothers as a folk remedy for diarrheal diseases, and somehow its use has been extended to family-size limitation. Women in the jungle believe that its "sourness kills the microbe [spermatozoid]."

Liver salts, which are generally used in combination with other "sour" substances like lemon, were said to produce anemia (by "killing red blood cells"). Again, the rationale seems to be that these preparations decrease menstrual flow and thus impair fecundity. Women claimed they needed to "take tonics [ferrous syrups] to return to normal menses."

Use of No Method

One of the goals of the focus groups was to determine why some women chose not to use any method of contraception. In addition to the constraints imposed on women by their status in society and in the family and by their limited knowledge of effective methods, other factors directly related to the methods themselves could be involved.

Women gave a range of reasons for not using contraceptives. For example, in Iquitos, women under 30 who had heard about the family planning program or about contraceptive methods referred to "lack of time" and "lack of transportation," among other problems. According to the older women, their husbands disapproved of their using contraceptives. One mother thought that breastfeeding was an adequate method. Nevertheless, fear of health hazards was the most common reason mentioned for not using a modern method. The never-users gave examples similar to the ones mentioned by the modern-method users.

The never-users expressed mixed feelings when they were asked whether they or their husbands would ever use a method of contraception. In some groups (particularly in Iquitos), women reacted positively. Nevertheless, it seemed to be too soon for them to decide. Those under 30 were more likely to think that their husbands would approve, although there was still much uncertainty among them as a group. There was not one spontaneous mention of a specific method likely to be used. In Cusco, some said they would choose to "take care naturally." Their descriptions about the way they would use this method suffered from the same errors as those of the actual users. They expressed a lack of confidence in this method because of changes in menstrual patterns.

Overall, compared with women in the other groups, the never-users were highly distinctive. They seemed to be uninvolved in most local activities and groups, such as mothers' clubs. The majority were not aware of the existence of a family planning program in the state hospital, although it was close to them. Likewise, they used very few hospital services, had not received any information on family planning from any source and knew even less than the traditional-method users about modern methods. The great majority had either no knowledge or incorrect information: "We don't know, don't understand"; "We have heard many things [about the methods]"; "How are we going to take the pills or have the injections, before or after the periods?" They admitted fearing modern contraceptive methods and said that their fear prevented them from using such methods.

It is interesting that although nonusers were able to name some modern methods of contraception (i.e., they could have been categorized as "knowing" a method in a survey using a closed-ended questionnaire), they knew almost nothing about these methods and were very afraid to try them. Likewise, their knowledge of other health matters—such as the treatment of diarrhea and the care of newborn babies, which had been the subject of recent information, education and communication campaigns—was meager.

Abortion was included in the discussion guide in an attempt to assess its place in women's attitudes toward fertility control. In general, the focus-group participants did not approve of induced abortions (or "extractions," as they were euphemistically known) because of danger to the mother's health and moral or religious constraints. (The latter were not mentioned by any users of modern methods.) Nevertheless, throughout all age-groups, the participants justified abortion on grounds of "desperation" if a woman "had too

many children." Furthermore, they felt that it was more acceptable if carried out early, because it was still "pure blood." The participants said abortion was common, especially among adolescents, but also among multiparous women. The methods they mentioned included repetitive intramuscular injections of hormonal preparations, insertion of rubber probes, use of pumps, deliberate falls and injection of liquids into the uterus. Herbs are also commonly used to induce abortions in Iquitos. Private doctors perform most abortions, according to the women, but they charge very high fees (as high as one-third of a lower-middle-class monthly salary). Abortions are also performed by practitioners who are not doctors, at lower cost but at greater risk to the woman's health. The survey participants supported legalization of abortion in exceptional cases only, demonstrating that it remains a sensitive issue. In general, they preferred to support family planning rather than encourage abortion.

Discussion

This qualitative study of women in two cities in inner Peru revealed a social context largely unfavorable to the use of explicit methods of contraception. Descriptions of the husband-wife relationship seem to confirm Peruvian women's low status in society, with childbearing and childrearing acting as effective instruments of men's domination. An almost total ignorance of the physiology of reproduction and the lack of a concept of planning in everyday life further complicate women's efforts to control their fertility. Women's experience in reproduction resembles a "flood tide of fertility" in which birthspacing is still an alien concept. Users of modern contraceptives do not necessarily possess greater knowledge than nonusers or users of traditional methods about modern methods, but despite various fears of side effects (the main barrier to use mentioned by traditional-method users and never-users) they are deeply committed to their use.

In the context of Peru's social structure, women have recourse to traditional methods, which are used and promoted by friends and relatives and can be obtained very easily at little or no cost. Their use follows the usual pattern of life, such as the habitual drinking of herb infusions or the free use of antibiotic capsules to treat any ailment, and they are perceived as free from side effects. It can be argued that the use of traditional methods is an effective way of tackling a problem not resolved by the current system of modern contraceptive service delivery, in which corruption, disorganization, lack of privacy and lack of promotion predominate. Users of traditional methods resemble the street vendors of the Peruvian economy; in the same way that these informal merchants avoid the hassle of a disorganized and corrupt system of accounting and taxation, "informal contraceptors" avoid long lines, fears of cancer and male disapproval. Informal contraceptors probably do not achieve substantial fertility reduction, but they satisfy their immediate intentions while avoiding an insufficient and stereotyped family planning program that does not take cultural variation into account. In the end, health officers show pride in the large proportion of traditional-method users in the statistics of all current users.

The richness of descriptions found here reflects only a few of Peru's cultures and ethnic groups. If we believe that the traditional-method users and the never-users are potential users of modern contraceptives, we must improve our understanding of their way of life so that we can design programs that are more acceptable to these women. Informational and educational materials, for example, could use the "hot/cold" or "sourness" notions as a basis for approaching audiences, gradually translating these ideas into the physiological mechanisms of modern contraception. Likewise, by devising ways of convincing women that the unsafe days are those in the middle of the cycle, rather than those during and around menstruation, the effectiveness of the rhythm method could be improved. Local expressions gathered through group discussions could be used in the delivery of messages about methods and their effects, including the negative ones; more acceptance and better understanding could be gained in such a way. In any case, a better understanding of the potential client's perspective would promote the creation of more appropriate family planning programs.

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Resumen

Sesiones de grupo focal realizadas en 1986 y 1987 con peruanas que residían en dos ciudades lejos de la capital revelaron que la baja condición de la mujer en la sociedad y su ignorancia de la fisiología de la reproducción conspiran contra el control de su fecundidad. Entre los factores que contribuyen a esta circunstancia, figuran el que a las mujeres no se les ocurra planificar el futuro y un programa de planificación familiar poco desarrollado. Si bien se ha registrado un cierto aumento en el uso de métodos modernos, casi la mitad de las usuarias recurren a métodos tradicionales, como el ritmo, que con frecuencia se emplea al revés y resulta, por ende, ineficaz. Según estudios anteriores, lo que más disuadía a las mujeres de usar métodos modernos era el temor a los efectos secundarios. Sin embargo, los debates en los grupos focales revelaron que las que usaban métodos modernos temían tanto los efectos perniciosos

como las que no. Más aún, las que usaban métodos anticonceptivos modernos recurrían a ellos porque tenían más miedo de quedar nuevamente embarazadas que de enfermarse o morir.

Si bien las encuestas habían indicado que en el Perú el número ideal de hijos era tres, los grupos mostraron que estimula a la mujer a tener más hijos que lo que considera ideal. La mortalidad infantil continúa siendo elevada. Las parejas raramente, si acaso, tratan el tema de la cantidad de hijos al poco tiempo de casarse. Las mujeres preferirían aplazar el primer embarazo hasta los dos o tres años de casadas, pero sienten que deben tener hijos de inmediato para complacer a sus maridos. Las esposas temen también la desaprobación del hombre si usan métodos anticonceptivos evidentes, ya que la planificación familiar se asocia con la infidelidad, y muchos hijos con la fidelidad. La planificación familiar se utiliza, entonces, más para limitar que para espaciar los hijos.

Résumé

En 1986 et 1987, des sessions de groupes de discussion dirigée ont été conduits dans deux villes péruviennes fort éloignées de la capitale. Les participantes ont permis de mettre en évidence jusqu'à quel point la condition inférieure dans laquelle les femmes sont reléguées, autant que leur méconnaissance de la physiologie des organes reproductifs, les empêchent de maîtriser leur fécondité. Entrent également en ligne de compte, d'une part, leur incapacité à prévoir pour l'avenir et, d'autre part, un programme national de planification familiale de faible envergure. Même si l'on a pu constater qu'un plus grand nombre de Péruviennes se servaient de méthodes contraceptives modernes, il n'en reste pas moins que pratiquement la moitié des femmes contraceptées s'en tiennent actuellement aux méthodes plus classiques comme la méthode Ogino, d'ailleurs souvent utilisée à l'envers et, de ce fait, inefficace. Des études antérieures ont fait apparaître que c'est essentiellement par peur des effets secondaires que les femmes n'utilisaient pas de contraceptifs modernes. Les débats menés au cours des groupes de discussion ont toutefois fait ressortir que celles qui utilisant des méthodes modernes redoutaient tout autant les effets nocifs que celles qui n'utilisaient pas ce type de contraception. En fait, si ces femmes avaient recours aux méthodes modernes, c'étaient bien parce qu'elles redoutaient plus encore une nouvelle grossesse qu'une maladie ou que même la mort.

Des enquêtes ont montré que les Péruviens désiraient, dans l'idéal, avoir trois enfants; les groupes de discussion ont pourtant permis de dévoiler les conditions qui encouragent les femmes à avoir plus d'enfants qu'elles n'en désirent vraiment. La mortalité infantile est, par exemple, fort élevée et les jeunes couples discutent rarement du nombre d'enfants qu'ils souhaitent avoir (si tant est qu'ils en discutent). Les femmes préfèreraient bien n'avoir leur première grossesse que deux ou trois ans après le mariage, mais pensent que pour plaire à leur époux elles se doivent d'avoir des enfants immédiatement. Elles craignent par ailleurs que leur mari n'accepte pas qu'elles aient recours à une méthode anticonceptionnelle bien précise car la contraception est souvent associée à l'infidélité, alors qu'une famille nombreuse est, au contraire, associée à la fidélité. Dans un tel contexte, la planification familiale sera avant tout un moyen de limiter, plutôt que d'espacer, les naissances.

"Male Knowledge, Use and Attitudes . . ."
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por ciento de los hombres conocía al menos un método anticonceptivo moderno, mientras que el 90 por ciento identificaba siquiera un método moderno o tradicional. El 25 por ciento podía mencionar un método tradicional o moderno sin que se le diera descripción previa. Casi el 19 por ciento de los hombres había utilizado alguna vez un método moderno, fundamentalmente preservativos. Sin embargo, el empleo de estos parecía más estrechamente relacionado con el contacto con prostitutas y la prevención de enfermedades que con el control de la natalidad. Entre los no usuarios, el 64 por ciento aseveró que quizás utilizaría algún método moderno más adelante.

En el caso de los padres de familia, uno de cada cuatro encuestados afirmó que no deseaba tener más hijos, proporción que ascendía con la prole. El número ideal de hijos resultó sorprendentemente bajo: cuatro, en el caso de los que tenían menos de esa cifra. El 80 por ciento de los hombres manifestó deseos de recibir mayor información acerca de la planificación familiar y un 76 por ciento querían la información para sus mujeres. De los 124 que explicaron su renuencia a practicar la planificación familiar, el 31 por ciento alegó que era nociva para la salud y un 12 por ciento que iba contra sus creencias religiosas, pero la mayoría adujo razones personales. Si bien los participantes en los cuatro grupos focales evidenciaron, en general, una actitud muy positiva ante la planificación familiar, resulto obvio que muchos de ellos tenían una idea errónea de la anticoncepción. Gran cantidad de los varones manifestó temores respecto de la seguridad y permanencia de los métodos modernos. Además, algunos creían que si las mujeres usaban anticonceptivos podrían llegar a serles infieles.

Résumé

Une enquête sur les connaissances, les attitudes et les pratiques effectuée auprès de 603 hommes au Burkina Faso a révélé que 75 pour cent des hommes connaissaient au moins une méthode moderne de contraception si une brève description de la méthode les mettait sur la voie, et que 90 pour cent reconnaissaient au moins une méthode moderne additionnelle de contraception. Vingt-cinq pour cent des hommes pouvaient citer au moins une méthode moderne ou traditionnelle sans être mis sur la voie. Près de 19 pour cent des hommes avaient utilisé une méthode moderne, essentiellement le préservatif, à un moment donné; toutefois, l'utilisation du préservatif était associée à l'idée de prostitution et de prévention des maladies plus qu'à celle de contrôle des naissances. Parmi les non-utilisateurs, 64 pour cent ont dit qu'ils utiliseraient peut-être une méthode moderne à l'avenir.

Un interrogé sur quatre ayant des enfants disait qu'il n'en désirait plus et cette proportion augmentait au fur et à mesure qu'augmentait le nombre d'enfants. La taille optimale de la famille était étonnament basse, de quatre pour ceux qui n'avaient pas encore atteint ce nombre. Quatre-vingt pour cent ont dit qu'ils souhaitaient avoir plus d'informations sur le planning familial et 76 pour cent ont dit qu'ils souhaitaient que ces informations soient données à leurs épouses. Sur les 124 hommes qui ont donné des raisons de ne pas vouloir utiliser le planning familial, 31 pour cent ont dit qu'il était mauvais pour la santé et 12 pour cent ont dit qu'il était contraire à leur religion, mais la plupart ont cité des raisons personnelles. Des hommes qui participaient à quatre groupes spéciaux de discussion étaient manifestement mal informés et nombre d'hommes ont exprimé la crainte que les méthodes modernes soient peu sûres ou aient des effets permanents. En outre, dans l'esprit de certains hommes, l'utilisation de contraceptifs par les femmes risquait d'en faire des épouses moins fidèles.

Special Report

The MEXFAM Community Doctors Project: An Innovative Service Delivery Strategy

By Humberto Arango

Project Background

In Mexico, as in many Latin American countries, rapid population growth and the widespread migration from rural areas to urban centers have given rise to large slums surrounding most cities. In spite of the considerable efforts made by the Mexican government, many of these areas lack basic health services—including family planning—or offer only insufficient services at best. Equally deprived of medical services but less visible are small rural communities. Private physicians have tended to locate in urban areas; in fact, 75 percent of practicing physicians are concentrated in 16 urban centers.[1]

The family planning services that have been available in rural or poor urban areas have traditionally involved either clinics or community-based distribution systems. Either way, such projects have proved to be expensive and to require heavy subsidies for the duration since they can seldom achieve self-sufficiency. Most nongovernmental family planning programs, for example, were initiated in Latin America during the 1960s and all of them still depend, to some degree, on international funds to deliver services to poor clients.

In 1984, the Mexican Foundation for Family Planning (MEXFAM), which is the Mexican International Planned Parenthood Federation (IPPF) affiliate, found itself with a large network of mostly urban clinics showing varying degrees of effectiveness. Virtually all of them required high start-up and maintenance costs because the physician and other staff members were salaried personnel. In addition, MEXFAM's clinics were in locations where they were increasingly competing with government-run family planning centers. Consequently, the association decided to close most of the less effective clinics and begin a search for a new service model that would contribute to the expansion of family planning activities.

Initially, MEXFAM attempted to transfer clinic doctors to underserved communities, opening part-time family planning offices—sometimes in the homes of community residents—where the physician would see patients for a few hours on certain days of the week. Thus, most doctors served more than one area. The experiment proved to be short-lived. When the project's poor performance was analyzed, however, two elements emerged as being directly related to success: the community and the support it provides the doctor, and the doctor's personal character.

With this information in hand, the MEXFAM staff again assessed family planning service delivery in Mexico. The foundation, as with any health care organization in Mexico, was well aware of the sizable reservoir of unemployed Mexican physicians. Mexico has a large number of medical schools for a Latin American nation (64, compared with, for example, 12 in Argentina, 38 in Brazil and 11 in Colombia[2]). They produce more physicians than the country has been able to effectively incorporate into the economy, and several studies have shown that high levels of unemployment and underemployment exist among Mexico's medical school graduates. For example, estimates from a 1986 survey of the doctors living in 16 cities indicate that 7.5 percent of the available physicians are unemployed and 9.4 percent are underemployed.[3]

As a result, in part, of university reforms that broadened access to higher education in Mexico, many of these doctors come from lower socioeconomic backgrounds and are familiar with poor rural and urban neighborhoods. MEXFAM saw these unemployed doctors as an opportunity to develop a better family planning service strategy that would be more cost-effective, place greater emphasis on quality of care, meet the existing needs of low-income areas and provide physicians with the chance to use their training where it is most needed. This strategy became the Community Doctors Project.

Establishing a Center

MEXFAM's objective was to develop a more effective service delivery model that would require a lower initial investment than the traditional approaches, achieve self-sufficiency in a reasonable amount of time and involve the community to such an extent that its members would eventually share responsibility for the project. Since in economically depressed areas, in particular, people make visit's to their doctors primarily when their children become ill, the Community Doctors Project was envisioned as an integrated health care model that would allow the doctor to promote family planning and overall maternal and child health at such visits.

Marginal urban areas and small towns with populations of approximately 20,000 are considered potential sites for the Community Doctors Project. Other criteria are a low level of socioeconomic development, high maternal and child morbidity rates, a lack of effective health services, low contraceptive prevalence rates, expressed support from community leaders and a capability within the community to pay moderate fees. (In many areas, services are provided regardless of ability to pay, although some fee is always requested.)

Once a prospective area is selected, MEXFAM hires a social worker to conduct a basic feasibility study. The study assesses the community's overall level of socioeco-

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nomic development (based on availability and quality of public services such as transportation and communication networks, community institutions and basic medical services and supplies). Using a sample of the population, the social worker also assesses contraceptive prevalence rates and determines the approximate size of the community to be served (hopefully, an area large enough to generate a demand for 20 to 30 consultations per day). If the area meets all the requirements, a physician is selected from the roster of candidates kept by MEXFAM.

In late 1985, MEXFAM began recruiting physicians by advertising in two major Mexican newspapers, *El Universal* and *Excelsior*.[4] According to Alfonso López Juárez, executive director of MEXFAM, approximately 300 physicians responded to the ads.[5] When these applicants were informed of the position they would be expected to fill, about half of them left. The remaining 150 doctors began training for the project but approximately 100 dropped out during training. The 50 who were left visited the areas where they would be working and just one withdrew at that time. The rest of the doctors made up the basic group with which MEXFAM launched its Community Doctors Project.

Once a doctor is assigned to a community, the doctor and the social worker, assisted by MEXFAM, assess the amount of initial support in the community for the project and the ability of residents to pay for services by interviewing approximately 60 persons in leadership positions (political leaders, teachers, priests and others accepted as leaders by the community). If little community support seems apparent at the beginning, efforts are made to generate it. The project staff contacts organizations that are already in place (e.g., community centers, mothers' clubs and health centers), and includes them in the project's start-up activities, emphasizing MEXFAM's goal that the community will assist in establishing the physician's practice and that the practice will eventually become self-sufficient. In the very new settlements that have yet to form organizations, the community is encouraged to form health committees to support the program. Ideally, the physicians' offices are located in busy areas (near markets, parks, transit depots or commercial areas) where they are clearly identified with MEXFAM's logo and an indication that they are family medical centers.

A coordinator, a network of promoters and the community doctor form the team that runs each center. The coordinator plays an integral part in the project. Generally, she is a young woman (hopefully from the community itself) who has received basic training in social work, community development or basic health care either in the last two years of technical secondary school or through one of the government programs that have been set up in small communities and marginal urban areas throughout Mexico (i.e., programs organized by the paragovernmental Institute for the Integrated Development of the Family or by the Mexican Health Ministry). The coordinator identifies and then contacts community leaders and local organizations to promote the concept of a center to provide basic health care and family planning. She also encourages their participation in the center's health education and prevention activities that are conducted in the schools and community centers. Initially, MEXFAM pays the coordinator a nominal fee based on targets set for new acceptors, educational activities, publicity and distribution of contraceptives (condoms and foam supplied free by the Mexican Ministry of Health). After a start-up period, successful coordinators can be hired full-time. Despite the limited incentives, MEXFAM has had no problems attracting candidates for this position; many of these women are anxious to be involved in developing their community, regardless of financial reward.

The coordinator also selects and trains a network of promoters who visit homes, invite people to the center's events, teach basic health care and initiate other activities for the benefit of the community. In addition, the promoters distribute contraceptives, refer new users to the community doctor's office and hand out coupons that can be given to the doctor to obtain the first family planning consultation free.

The community doctor is responsible for the quality of services and for the community activities that the center organizes. The authority and prestige that his social status confer help to motivate the community leaders and the community at large to practice family planning and to participate in the center's activities. MEXFAM trains each community doctor in working with the community and in organizing education campaigns, including giving lectures in schools. In addition to receiving instruction on contraceptive methods and IUD insertion techniques, the physicians are also given basic administrative training so that they can manage the center that will eventually become their own practice.

The community doctor signs an agreement, not a contract, since he is not a MEXFAM employee. Under this agreement, MEXFAM pays rent for the first year if no suitable space is offered free of charge. MEXFAM also lends office furniture and medical equipment to the community doctor; paints and decorates the center (all centers are painted in yellow and blue, colors selected to identify the program); and supplies educational materials and contraceptives at cost. To become well-known in the community, the new doctor is encouraged to visit homes to promote the center, conduct a health census of the families in the community and develop a family health registry for his general practice.

For the first two years of a center's operation, MEXFAM helps the doctor build a stable patient base by guaranteeing a monthly income that is tied to the number of first-time family planning acceptors he sees. The doctor is paid by MEXFAM for a minimum of the equivalent of 120 first-time family planning visits during the first month of operation. (Giving lectures and adding families to the community health registry are also included in this figure, with lectures counting as two first-time family planning visits.) This amount is reduced by five for each successive month until payments stop altogether at the end of two years. By that time, the doctor is expected to have developed a sufficient client base to support the practice on his own. MEXFAM sets no maximum number of first-time family planning visits for which it will pay, provided that a contraceptive method (except for condoms) is prescribed during one. If a community doctor has given 400 consultations for three consecutive months, MEXFAM considers his practice to be self-sustaining, whether the two-year period has elapsed or not. The community doctor is then entitled to purchase the office and medical equipment at 50 percent of cost. The doctor who has reached self-sufficiency continues his relationship with MEXFAM through an agreement to become an "affiliated doctor," under which he continues to receive training and contraceptives from MEXFAM.

The doctor can also make house calls and if a family planning method is prescribed during one, MEXFAM pays for the visit at a higher rate than a regular first-time visit at the center, which is approximately one dollar. The amount that doctors charge for general medical consultations cannot exceed twice that established for first-time family planning visits. The community doctor can also further his income from MEXFAM through delivering talks and lectures in schools or at community meetings and expanding the family

health registry of the community. Since the community doctor is not a MEXFAM employee, he is also free to conduct any other type of medical work (e.g., laboratory tests, operations and hospital work), but the fees he charges must be in line with the levels set by MEXFAM. Moreover, should a doctor wish to hire additional personnel (such as a nurse or secretary), he must pay their salaries himself.

Supervision and feedback between MEXFAM and the network of centers occur through visits to the community doctor's office approximately twice a month by a MEXFAM program coordinator who oversees a minimum of three centers. Also, a regional coordinator (responsible for at least 10 programs) visits selected community doctors once a month; in turn, the regional coordinator is supervised by the program director and other officers from MEXFAM's central offices in Mexico City.

Project Results

In March of 1988 and April of 1989, the author and other representatives from donor agencies visited several centers established through the Community Doctors Project. At four specific centers visited both times, we were able to see how the program had progressed over the year. Two of these centers were in the marginal areas of San Luis Potosi, a city of 550,000 inhabitants, and the other two were set up in small towns of approximately 20,000 inhabitants. The four physicians at the centers had started work as community doctors simultaneously—they received similar training, facilities, equipment and guidelines for the functioning of the center and for their work with other personnel and with the community. By our return a year later, the success of each of the doctors was roughly what we had expected.

Juana Raquel Muñoz worked in one of the small towns. At the first visit, we encountered an office decorated with typical family planning posters and medical diplomas; books and photos of the doctors' children were displayed on her desk. The office was characterized by a general feeling of professionalism and order, and we saw that patients responded positively to her gentleness. Muñoz had decided to hire a secretary, whom she paid herself, although at the time of our first visit, her own income was far from being certain. Muñoz was known to the community since she had previously worked in the local government health center.

A second doctor, Mario Rodríguez, was working with his center's coordinator to develop a plan for home visits and other activities. He seemed highly motivated and had invited a number of women from the community to his office to discuss their children's most common medical problems. Rodríguez had put up posters and area maps on the walls. He spent a good portion of his time visiting the community and its leaders and had, in a short period, established several important contacts.

The third physician, by contrast, seemed withdrawn and cold. At the time of our first visit, the arrangement of the office was still not finished, and there were no personal effects in evidence. In our conversation, this doctor responded satisfactorily although perfunctorily to all our questions about her experience on the project and its progress. She had left the establishment of community relations mostly to the coordinator and showed little interest in getting involved herself.

In the case of the fourth doctor, the coordinator had developed a plan of community work on her own and the doctor had merely approved it. Although the doctor did visit several places in the community while carrying out the feasibility study, he had not returned to them after the center's establishment. The coordinator had informed him of the initial contacts she had made with potential promoters, but he had yet to meet with any of them.

A year later, the two doctors who were unenthusiastic and little involved had left and, in accordance with project policy, had been replaced with new doctors who were beginning their ground-laying work in the community. The other two doctors, Muñoz and Rodríguez, were running effective medical centers in their communities. Muñoz had rented a big house, had installed her office and waiting room in the lobby and front rooms and had set up living quarters in the back. She was also constructing a space in her house to serve as an emergency clinic and was intending to start an obstetrics practice as well. At that time, Muñoz was seeing between 20 and 30 patients per day and giving lectures at the school and in the community center. She was also considering hiring another physician for a few hours a day to fill in for her while she was out of the office working in the community.

Rodríguez had also built up his practice to around 30 patients per day, having hired another doctor to see patients in the office while he was out in the community and making house calls. The maps on the wall showing the types of center activities coded in different colors had multiplied. Rodríguez displayed a sense of pride in the work that had been accomplished over the past year, and he said that he planned to stay on for at least several more years.

By the beginning of 1989, 150 community doctors were working in 30 of Mexico's 32 states. Initially supported only by MEXFAM and IPPF funds, the project now enjoys the support of additional donors including the Canadian International Development Agency, the U.S. Agency for International Development, John Snow Inc. and the MacArthur Foundation. In the three years that the project has been in existence, approximately 30 percent of the community doctors have reached self-sufficiency and have become MEXFAM-affiliated doctors.[6] (MEXFAM continues to supply contraceptives, which are sold by the doctor at a set fee.)

Experience with the project has shown that many doctors leave after serving for a short period; where community involvement has been high, support to bring in and maintain a new doctor is usually high also, ensuring that the center continues despite the change in personnel. Rough overall estimates indicate that in a one-year period, 60 percent of doctors remain in their centers while 40 percent leave.[7]

In some communities, it takes longer than two years for a doctor to become self-sufficient. Nevertheless, the strategy seems to be one of the few being implemented in Latin America that does not require a high initial investment and has at least the possibility of leading to self-sufficiency in a relatively short period. A recent study has examined the economic profile of the typical patient who sees the community doctor. The findings show that the project is reaching its targeted low-income population: For 90 percent of the program's users, the family income is less than 1.5 times the government-established minimum legal salary (U.S. $100 a month).[8]

Project Evaluation

MEXFAM has collected data since the project started in order to evaluate its progress, determine whether or how targets were being met and compare and analyze success rates. A large variation between centers in the number of family planning users emerged early, even among centers located in areas of similar socioeconomic development. In early 1987, an exploratory study conducted by an independent research organization, the Mexican Institute of Social Studies (IMES), came up with specific proposals for improving the project.[9] These hypotheses were subsequently evaluated in a second study,[10] the results of which formed the basis for a project manual with specific

guidelines and ideal personnel profiles.[11]

In addition, the IMES conducted a survey of 403 women in three metropolitan areas served by the Community Doctor's Project. Several important findings emerged from this study of user characteristics and opinions about the program.[12] First of all, the program serves predominantly women and children. Sixty-nine percent of the women surveyed had visited a center and 52 percent had taken their children to see the community doctor; however, just 13 percent of the husbands had been to the center. These women tend to be married (78 percent), young (69 percent are under age 29) and homemakers (90 percent). Their level of educational attainment is low—45 percent have completed primary school and just three percent have finished secondary school. When asked why they sought family planning, 39 percent mentioned their economic situation, 22 percent said they wanted to space their pregnancies and 18 percent cited care for the children they already have. The need for family planning in these communities is evident in the proportions who have had more than five pregnancies (15 percent) and one or more abortions and miscarriages (25 percent).

When asked to evaluate the care they had received at the MEXFAM family health center, 41 percent of the women interviewed said they were "highly satisfied" and 49 percent responded that they were "satisfied." The MEXFAM centers were rated "good" by 55 percent of the women; by comparison, three public health institutions each received ratings of "good" by 38 percent, 30 percent and 17 percent of the women, respectively.

The profile of an "ideal physician" that emerged from the IMES evaluation is a doctor with a degree from an accredited medical school, preferably no older than 35; someone interested in community affairs and motivated to help the community; a person willing to work with a team under difficult conditions; and preferably someone who has had some previous experience with family planning. Personal traits such as having an entrepreneurial spirit and an ability both to communicate with patients from marginal areas and to understand their cultural values are also shown to be important elements in achieving success. Women doctors seem to be better accepted since the majority of patients are women and children, who often feel more comfortable seeing female physicians than male physicians. Many of the doctors who applied to MEXFAM were recent graduates. Thus, although these applicants had fewer years of experience overall, they also had very recent experience working in underprivileged communities, since physicians in Mexico must complete one year of work in a rural area as a prerequisite for graduation.

The preliminary study detected a potential conflict between two objectives—achieving family planning targets and conducting preventive and educational activities. The conflict arises because many doctors believe that the educational component of their job takes them away from the medical work they have been trained for. This problem may become more acute once the doctor reaches self-sufficiency and no longer has a coordinator to help promote the center in the community.

Overall, the urban areas have been more responsive to the project than the rural areas, where communities still rely on traditional folk medicine and healers rather than on modern physicians. In addition, the study brought out the importance of having the physician work closely with the coordinator to ensure community acceptance and participation. In general, the doctors expressed satisfaction with their training in contraceptive methods but emphasized the need to be kept up-to-date on general medical information, since they live and work in relatively isolated areas with limited access to the media. The study also indicated that the promoters were dedicating a larger than expected proportion of their time to basic medical care and were interested in receiving more training in that area. In response to the suggestion that a line of basic medicines was needed, the centers began dispensing some commonly used medicines, such as antiparasite preparations.

Health committees or committees of community leaders have proven to be essential in sustaining the center and its activities, particularly in those areas with no preexisting community organizations or in ones showing little interest in supporting the doctor's office. It is equally important to establish clear channels of communication between the committee and the center from the beginning so that respective areas of responsibility, functions and roles remain clear to all parties involved. Committee members have sometimes used the center to derive personal benefits in terms of status or prestige, a practice that can be acceptable as long as it does not interfere with the work of the center. The positive influence of the health committee is especially useful once the community doctor has become self-sufficient and no longer has the promotional help of the other members of the team.

Finally, the evaluation brought out the importance of continuous backing by an already recognized institution. This institutional support needs to continue even after the community doctor has become self-sufficient to increase the likelihood that the doctor will stay. The community would thus be assured the stability of an ongoing center. Furthermore, experience has shown that this type of project requires the support and constant supervision that is only available from an organization with a relatively sophisticated management structure. MEXFAM is currently conducting a study to determine the costs of the Community Doctors Project and of establishing a typical center (results are expected to be available by the end of 1989). This information will allow cost-effectiveness comparisons to be made with other strategies and will determine the feasibility of replicating it in other countries.

Regional Possibilities

Several countries in Latin America have expressed interest in the Community Doctors Project and an informational meeting took place in Guadalajara, Mexico, in September of 1988; 19 Latin American and Caribbean countries were represented. In addition, family planning organizations from Colombia, Costa Rica, Ecuador, Guatemala and Peru have taken steps toward creating similar programs of their own. The replicability of the Community Doctors Project depends to a large extent on whether the program can be adapted to local circumstances. For Mexico, recruiting doctors for the project was relatively easy, since many physicians come from lower socioeconomic backgrounds and do not occupy as elitist a position in society as doctors in most other Latin American countries. As mentioned earlier, although many doctors abandon the project either immediately upon learning of the working conditions or after a short time of involvement, enough Mexican doctors seem to be willing to work in the targeted areas to provide a sufficient pool of candidates. In addition, given the comparatively high number of medical schools and the tendency of graduates to cluster in very few urban centers, there are undoubtedly more unemployed and underemployed doctors in Mexico than in other countries.

An element worth considering in the replicability of this project is whether there is a sponsoring organization capable of providing the necessary back-up in institutional support, logistics and supervision.

(Continued on page 105)

Comment

Women's Status, Education and Family Formation In Sub-Saharan Africa

By Mary M. Kritz and Douglas T. Gurak

In recent years, scholars and policymakers have turned their attention toward the relationship between women's position in society and fertility levels, and, more specifically, toward those dimensions of women's status that have an impact on fertility.[1] To date, most of the research on these issues has focused on Asian countries; however, because cultural and institutional structures and the gender relations they shape vary across regions, this theoretical and empirical work needs to be extended to other regions of the world. This article begins that task by examining women's status and its relation to fertility in Sub-Saharan Africa.

Insights gained from the study of fertility trends in Asian countries can provide a fruitful guide for such an examination. Among Asian women, fertility levels and rates of change appear to vary with the country and the women's status in that country. For example, John Knodel and colleagues argue that the relatively favorable position of Thai women contributed to the rapid fertility decline in that country. Among measures they cite as indicative of the status of Thai women are high rates of labor-force participation, near universal literacy, economic independence and control of family finances, and a relatively high degree of autonomy, as well as comparatively egalitarian spousal relations and the absence of son preference.[2]

On the other hand, as Tim Dyson and Mick Moore observe, fertility levels in northern India remain high in a society characterized by arranged marriages, dowries, early age at marriage, social segregation of the sexes, limited spousal communication and son preference.[3] They add that by restricting women's physical movement, limiting their education and failing to provide them with social support for birth control use, the patriarchal kinship system in northern India encourages women to produce male heirs and constrains them from seeking out family planning services. Scholars studying the status of women in other Asian countries have looked at similar factors and how they shape fertility.[4]

Women's Status in Sub-Saharan Africa

What do we know about spousal relations, female autonomy, age at marriage and other dimensions of women's position in Sub-Saharan countries? How can we measure changes in women's status? Are women's roles changing, and if so, what are the implications of such changes for fertility? Given the dearth of available data, these questions cannot be fully addressed; what we can do is set forth some preliminary answers.

The body of research on fertility and its proximate determinants in Sub-Saharan Africa tends to focus on cultural, socioeconomic and demographic factors and shows that nuptiality patterns, kinship systems and fertility patterns differ considerably across the region.[5] However, these studies have found that overall, the demand for children remains strong in Sub-Saharan countries, and no apparent reductions in fertility have yet taken place. Moreover, they suggest that the pace of fertility decline in Africa is likely to be slower than it was in Southeast Asia or in Latin America.

World Fertility Survey (WFS) data for African countries indicate that only small minorities of African women want to avoid further childbearing, a fact borne out by low levels of contraceptive prevalence throughout the region.[6] Most researchers would agree with Odile Frank's observation that "because of high mortality in a hostile environment, African social patterns and reproductive behaviors came to settle at an equilibrium that traded-off the very highest fertility for rudimentary supports to child survival. . . ."[7] Indeed, most nuptiality patterns, reproductive behaviors and other social practices associated with family formation and reproduction in Sub-Saharan Africa can be interpreted as either maximizing fertility or minimizing mortality and morbidity.[8]

Despite their contributions, none of these studies have looked explicitly at women's status. Further, there is little agreement about what the position of women in Sub-Saharan Africa is. A number of scholars argue that the economic and social status of Sub-Saharan women is relatively high compared with that of women in southern or western Asia.[9] For example, John Casterline and colleagues note that "by many criteria, such as schooling participation, economic independence and freedom to circulate outside the familial setting, the status of women in Sub-Saharan Africa is higher than that of women in North Africa, West Asia and South Asia. . . ."[10]

Women's economic independence in Sub-Saharan countries derives from the traditional practice of wives receiving land from their husbands' lineage to grow cassava and other subsistence crops for feeding the family. If women are able to produce a surplus, they are allowed to sell it in the marketplace and to keep the income. Further, many women, particularly those in western Africa, engage in trade and thereby earn additional income for family expenditures or for personal use. These opportunities give African women a degree of economic independence, access to

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resources and autonomy of movement and decision-making that are generally not available to women who reside in rural areas of Asia.*

On the other hand, African women are believed to have less autonomy than most Asian women in reproductive matters.[11] Scholars who claim that women's status in Africa is poor focus on the patriarchal social structure and the extent to which this structure allows men to control both women's production and reproduction.[12] Suellen Huntington, for example, argues that although women in traditional African societies are allowed mobility and have the right to earn some money, "men control women and women's production through [women's] subordination in marriage."[13]

Under the traditional African family system, the survival and maintenance of the lineage takes priority over the conjugal bond. When they accept a bridewealth payment, the bride and her family agree to transfer reproductive rights to the husband and his lineage. If divorce or separation occurs, the wife is obliged to return the bridewealth payment and leave her children with their father. Findings from the WFS indicate that large numbers of African women failed to respond to the survey question on the number of children desired;[14] this failure is consistent with a kinship system in which family-size decisions are made by the husband and his lineage. However, the costs of raising children are sustained not by the husband, but by the wife or by other women to whom the children are fostered out. Thus, husbands benefit from children's labor but bear few of the costs of their rearing, and so have little incentive to reduce fertility; women bear most of the costs of children, but do not see family-size decisions as one of their basic rights.

Although traditional social structures prevail throughout Sub-Saharan Africa, creating a high demand for children, these structures may be changing and such changes may affect the position of women in society. For example, a study of the rural family in southern Cameroon found declines in bridewealth payments, widow inheritance and polygyny and increases in age at marriage.[15] In addition, the study revealed that over the past two decades, the state has played a significant role in promoting change by providing mass education, promoting legal rather than traditional marriages and instituting legal changes to make it possible for women to keep their children after divorce and to improve the inheritance rights of their children. At the same time, women's economic independence and contribution to family expenses have increased. Similar findings are reported in other parts of the African studies literature.[16]

Africa appears to be a continent undergoing rapid social change while experiencing serious economic difficulties. The problems of the region are well-known—low per capita gross national product, reliance on imports for basic food supplies, poor nutrition and health, and political instability. Although these problems severely constrain development and limit improvements in social well-being, they have not kept the modern world out of the region. Mass education has become well established: Whereas only 38 percent of children of primary school age in Sub-Saharan Africa were attending school in 1960, that proportion had doubled to 77 percent by 1983.[17] Radio, television and film expose people even in remote rural areas to modern ideas. Moreover, urbanization is proceeding rapidly throughout the region, increasing by six percent annually; currently, one-third of the population of Sub-Saharan Africa live in urban areas.[18]

Education and Age at Marriage

One important indicator of women's status in society is their access to education. Education can have a profound impact on the position of women, particularly in strongly patriarchal societies where it allows girls to have a wider social network, new reference groups and greater exposure to the modern world than they might otherwise experience. In addition, exposure to schooling allows girls to be free from parental control for several hours a day and gives them experience in interacting with boys, strangers and authority figures other than their parents.

John Caldwell cites the role of mass education within a country or cultural group as a key factor in changing intergenerational attitudes and economic relationships within the family.[19] He identifies several mechanisms through which such changes take place: The labor that children contribute to the family decreases; the cost of children increases as the need to pay for school fees, clothing, books and other commodities rises; children shift from being producers to being dependents; and Western middle-class values are spread. He also argues that boys and girls often have differential access to educational opportunities; that the modernizing effects of education may be greater for girls than for boys; and that traditional families often fear schooling for girls, because they believe that educated women will be less likely than their uneducated counterparts to accept traditional family relationships.[20]

That education does indeed expose girls to modern ideas was confirmed by Caldwell's review of primary school textbooks in Ghana, Nigeria and Kenya. Caldwell reports that "we found no support for such basic African traditional institutions as polygyny, unstable marriage, the condemnation of sterile women or women who repeatedly lose children, bewitchment, and, most importantly, the attitude that the needs of the family have priority over those of the community."[21]

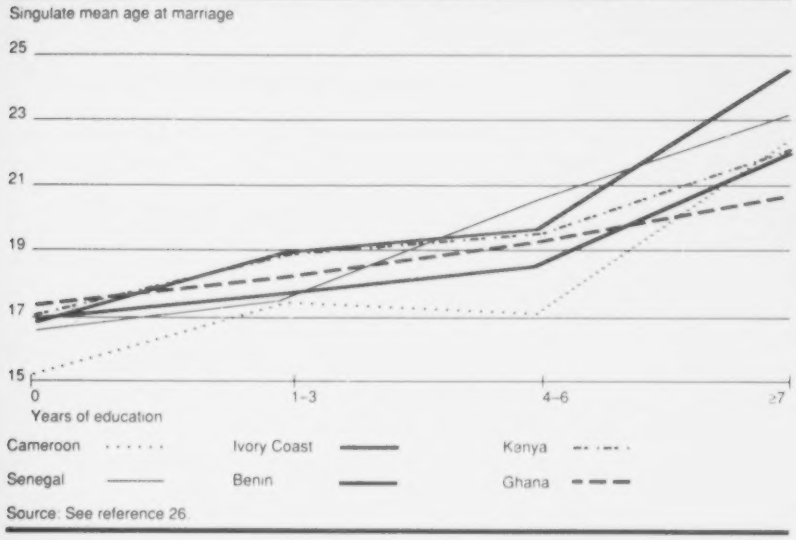
Knowing how to express ideas and how to ask questions are particularly important skills for girls to have (although they are discouraged from doing both under the traditional system). As educated girls mature, they can continue to use these social skills and to benefit from the social networks formed during the school years. Such tools are cited by John Caldwell as important for improving health, because they give women the ability to decide whether illness requires the attention of health personnel; they enable women to find out how and where to obtain information about health services; and they empower women to take action when necessary.[22] A similar argument could be advanced in the case of fertility: If a woman wishes to limit her family size, at the very least she will need the skills necessary to know how to go about seeking information about birth control and family planning services.

The relationship between education and fertility is strong. A review of WFS data found an inverse relationship between education and fertility in 24 of the 38 countries studied.[23] Fertility levels were invariably lowest among women who had had more than seven years of schooling. However, in nine countries, women with some schooling (4–6 years) had slightly higher fertility levels than those with 1–3 years of schooling.

For education to influence fertility, however, it first has to have some effect on the demand for children. As their amount of education increases, women's views

*How these patterns vary across Africa is unclear. In some Islamic areas, such as northern Nigeria, women are secluded and restricted from participating in agricultural or other economic activities outside the family compound; however, many engage in trade by using their children as "sales agents." In eastern and southern Africa, women engage in farming, but do not tend to trade.

Figure 1. Singulate mean age at marriage in six African countries, by education level



Source: See reference 26.

about many things change, including desired family size. Moreover, they are likely to become less willing to enter into traditional marriages or to accept husbands who have less education than they do. As such, education facilitates a shift toward a conjugally oriented relationship in which the husband and wife are "more likely to take into account the interests of the other sex and of the conjugal unit as a whole."[24] While certain traditional customs may continue to be practiced, modern marriages are more likely than traditional unions to be affective and monogamous, and both partners in conjugally oriented marriages are more likely to have similar views on issues such as the desired family size.[25]

Findings from the WFS confirm a strong inverse relationship between the number of children desired and educational level, despite considerable regional variation in the number of children that educated women desire.[26] In general, women in Sub-Saharan Africa who have had seven or more years of schooling want the same number of children as do uneducated Latin American women. And, whereas women in almost all of the Asian and Latin American countries with seven or more years of schooling want fewer than four children, comparable women in Africa want at least five children.

The age at which women marry is another indicator of women's position. I societies characterized by patriarchy, sharp spousal age differences and polygyny, women tend to marry early. Under such a traditional system, the patriarch marries off his daughters early as a means of ensuring their purity and in order to reap the benefits of the bridewealth payment.

That the traditional system in Sub-Saharan Africa does indeed encourage early marriage can be observed in Figure 1, which shows the singulate mean age at marriage among women in selected African countries.* The mean among African women with no education is around 17 or younger. (No country in Latin America, and only Bangladesh in Asia, has such a low singulate mean age at marriage.) On the other hand, educated African women tend to marry later, thereby shortening their period of exposure to pregnancy. Reduced exposure can lead to reduced fertility, unless birth intervals are shortened simultaneously. Findings from the WFS confirm a positive relationship between women's education and age at marriage: Women with seven or more years of schooling generally marry 2–3 years later than do women with 4–6 years of schooling.[27]

Table 1, which shows the proportion of women in given age cohorts from selected African, Latin American and Asian countries who had married by age 20,[28] gives an idea of marriage trends in the different

Table 1. Percentage of women married at age 20, by region and country, according to age cohort

Region and Country	20–24	25–29	30–34	35–39	40–44	45–49
Africa						
Benin	74	71	71	71	64	57
Côte d'Ivoire	79	77	78	77	73	72
Ghana	72	69	74	72	68	71
Kenya	65	70	76	76	74	68
Lesotho	70	67	69	66	68	70
Nigeria	76	80	83	79	70	70
Senegal	77	79	90	90	88	88
Asia						
Bangladesh	93	97	99	98	98	98
Indonesia	72	81	84	86	87	85
Korea	15	18	26	46	70	88
Malaysia	37	43	55	65	72	75
Nepal	86	85	86	82	83	81
Pakistan	72	77	83	87	89	92
Philippines	30	37	41	45	49	46
Sri Lanka	27	34	48	51	57	59
Latin America						
Colombia	42	4	49	52	45	42
Costa Rica	40	35	41	44	42	37
Ecuador	46	46	52	52	54	50
Mexico	47	49	52	53	56	50
Panama	45	51	53	58	59	60
Peru	46	51	56	56	61	57

Source: See reference 27.

*The singulate mean age at marriage is the average number of years lived before first marriage by women who eventually marry. Since marriage is nearly universal by age 25 throughout Sub-Saharan Africa, the proportion of women who remain single at higher educational levels is negligible and, therefore, does not bias the findings.

regions.* The data indicate a trend toward later marriage among younger women in most Asian and Latin American countries, but not among those in most of the Sub-Saharan nations. Kenya, Nigeria and Senegal are the only African countries that show a trend toward later marriage among younger women. In the seven Sub-Saharan countries included in the table, 65–79 percent of 20–24-year-old women are married by age 20. Even among the oldest cohorts in Latin America, women do not have such high rates of early marriage. On the other hand, early marriage rates among women in some Asian countries (Bangladesh, Indonesia, Nepal and Pakistan) are comparable to, or even higher, than the rates in Africa.

In sum, the relationship between education and family formation in Sub-Saharan Africa is similar to that found in Asia and Latin America, but the level of education required to affect fertility levels appears to be much higher in Africa. Although the specific mechanisms remain to be unraveled, one important path through which education affects fertility is likely to be changes in women's social position. Consequently, it is important to examine the system of gender relations in the society and to assess how such relations might alter the demand for children.

Trends in Educational Equality

One indicator of gender relations is the degree of equality between men and women in educational opportunity. Decreases in educational differentials between husbands and wives are thought to be an important precursor of fertility decline, because greater gender equality is likely to lead to a stronger bond between spouses and to reduce the flow of labor and resources from wives to husbands.[79]

Throughout Sub-Saharan Africa, primary education has expanded rapidly over the past two or three decades. In fact, in recent years, school enrollment is one of the few development indicators to have steadily improved in almost all developing countries. Table 2 shows the proportion of all primary school pupils who were girls in 1960 and in 1983 in 39 Sub-Saharan countries. In 1960, only 34 percent of total primary school enrollees were girls, but by 1983, this proportion had increased to 44 percent. The overall increase in educational gender equality occurred during a period in which school enrollment levels in the region increased more than threefold.

Nevertheless, country rankings on educational equality remained comparable over the 23-year period. For example, Ghana, Senegal, Sierra Leone and Uganda were all very near the means for female school enrollment at both points in time, whereas Chad and the Central African Republic were well below in both years.

As the table illustrates, gender equality in access to primary school varies significantly across the region. In two countries—Botswana and Lesotho—higher proportions of girls than boys were enrolled, reflecting not only an unusual situation for girls, but also that boys probably leave school early and migrate to South Africa to work in the mines and seek other employment. Other countries that had achieved gender parity (48 percent or more of school enrollees were girls) in primary education by 1983 are Congo, Gabon, Kenya, Madagascar, Mauritius, Rwanda, Swaziland, Tanzania and Zimbabwe. With the exception of Gabon and Congo—both western Africa oil exporters—all of these countries are located in southern or eastern Africa. In contrast, the Sub-Saharan countries with greater gender inequality tend to be located in western Africa or in the semiarid countries that border the Sahara. Benin, the Central African Republic, Guinea, Guinea-Bissau and Somalia all recorded a low proportion of females enrolled in 1983. Although Chad, an Islamic country, had the greatest gender inequality in 1983, with only 27 percent of all students being female, this proportion nevertheless represents an improvement of 16 percentage points from the 1960 level of 11 percent.

What implications do these variations in educational equality have for family formation and fertility? Figure 2 (page 104) shows the association between the proportion of secondary school enrollment that was female in 1960 and the proportion of 15–19-year-old women never married in 1980.† Female school enrollment serves as a proxy for women's position and is closely associated with later age at marriage (with a correlation of 0.74, versus one of 0.63 for primary enrollment). The figure shows that countries where women had greater access to education in 1960 had higher proportions of never married young women in 1983. It is likely that countries with the least gender inequality in 1960 had weaker patriarchal structures to begin with and that these measures are proxies for other social processes that would also favor a later age at marriage. Although there is a need for additional analyses utilizing independent measures of lineage and other familial structures to estimate more adequately the impact of increasing gender equality on family formation, the present analysis suggests that such improvements do influence the family formation process.

Table 2. Percentage of all primary school enrollees who were female, selected African countries, 1960 and 1983

Country	1960	1983
All	**34**	**44**
Angola	33	46
Benin	28	33
Botswana	59	53
Burkina Faso	29	37
Burundi	24	40
Cameroon	33	46
Central Afr. Repub.	19	35
Chad	11	27
Congo	34	49
Côte d'Ivoire	26	41
Ethiopia	24	38
Gabon	38	49
Gambia	31	38
Ghana	35	44
Guinea	26	32
Guinea-Bissau	30	33
Kenya	32	48
Lesotho	62	58
Liberia	29	40
Madagascar	44	48
Malawi	36	42
Mali	28	37
Mauritania	19	39
Mauritius	47	49
Mozambique	38	43
Niger	30	36
Nigeria	37	42*
Rwanda	32	48
Swaziland	50	50
Senegal	32	40
Sierra Leone	34	41
Somalia	25	36
Sudan	27	41
Tanzania	34	49
Togo	28	39
Uganda	32	43
Zambia	29	40
Zaire	27	43
Zimbabwe	45	48

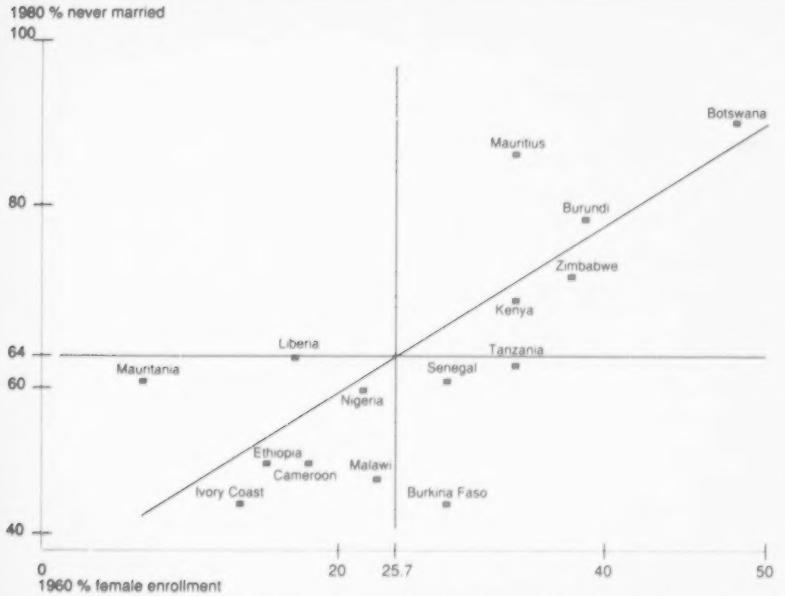
*1980 data.

Nevertheless, fertility levels in Sub-Saharan countries remain high and stable. We analyzed the change in crude birthrates (CBR) between 1965 and 1984 in 39 African countries and found that the region as a whole experienced a slight decline in the CBR of 0.38 births per 1,000

*The reliability of these data are open to question, because of difficulties experienced by older women in recalling their age at marriage. Maternal mortality could also bias the findings for the older age cohorts. In developing countries, women who bear large numbers of children increase their mortality risk. Since such women begin their marriages and childbearing at early ages, the older cohorts would tend to show older ages at marriage because mortality would have removed many high-risk women from the cohort.

†Secondary enrollment data were used, since this measure is fairly consistently related to lower fertility. Graphs were also produced using primary enrollment data, and the patterns are the same, though with smaller correlations.

Figure 2. 1980 percentage of women aged 15–19 who were never married, according to 1960 percentage of all secondary school enrollees who were female, selected African countries



Notes: Pearson correlation = 0.74; horizontal and vertical crosslines are means; regression line, y = 39.46 + 0.97x.
Sources: **Marriage data**—The Population Council database; **enrollment data**—see reference 17.

population (unweighted).* However, Mauritius experienced a decline in the CBR of 16, more than twice that of any other country; when it is removed from the analysis, the mean change is actually an increase of 0.03 births. No matter how it is examined, the average CBR change over the 23-year period is nil, although there is considerable variation in the extent and direction of change among the individual countries. For example, Cameroon and the Central African Republic experienced increases of between seven and eight births per 1,000 population, while Botswana and Zimbabwe experienced decreases of a similar magnitude.

The greater the percentage of girls enrolled in secondary school in 1960, however, the greater the decline (or the lesser the increase) in the CBR from 1965 to 1984. This pattern is of interest, because declines in infertility from 1965 to 1984 would normally have led to increases in the crude birthrates of many countries. Moreover, increases in fertility levels frequently occur at the beginning of the demographic transition, which would further diffuse any relationship between gender equality and CBR change. The fact that the correlation between female enrollment percentages and CBR changes is not higher may be attributable to these factors.

Discussion

Traditional cultural beliefs and social structures remain strong throughout Sub-Saharan Africa, but the influence of modernization is leading to rapid social change. Mass education is well established in the region and, in many countries, particularly those in southern and eastern Africa, girls have achieved or are close to parity with boys in access to primary schooling. The joint observation of three factors examined in this article—within-country cohort differentials in family formation; between-country differentials in educational equality and family formation; and the expansion of educational opportunity and CBR change—suggests both some basis for optimism on the demographic front and a need to improve understanding of the dynamic mechanisms linking traditional social structures, rapid change, education and family formation.

Our review of levels and trends in educational gender equality shows sharp differentials across the region. Of particular interest is the fact that contraceptive prevalence is increasing in those countries where there are greater levels of gender equality, particularly in eastern and southern Africa. Recently reported contraceptive prevalence rates in a few such countries are 40 percent in Zimbabwe, 29 percent in Botswana, 17 percent in Kenya and six percent in Lesotho. The spread of contraceptive prevalence does not seem to be limited to these regions of Africa, however: Preliminary findings from Demographic and Health Survey reports show that prevalence rates are on the rise in most urban areas of Africa, particularly among women with a primary or higher level of education.

Our analysis suggests that countries that were more advanced in terms of gender equality in 1960 experienced greater declines in fertility by the 1980s. However, we have not tracked actual change, so this finding may reflect self-selection of countries with tendencies toward equality linked to particular demographic developments. The results also provide some basis for arguing that transformations in the institution of education produce, albeit slowly, changes in the position of women and demographic responses to those changes. That the underlying processes are occurring in most Sub-Saharan countries, and that the within-country differentials are consistent with analyses of between-country differences, supports this line of reasoning.

Nonetheless, our analysis raises more questions than it answers. Very real social changes are under way in Africa, but their implications for fertility remain poorly understood. Clearly, better data are needed to specify more precisely the nature of the underlying processes. The preliminary findings reported here strongly indicate a need for in-depth analysis of the manner in which education, and especially increases in female access to education, influence family formation and fertility. In the short run, to clarify the situation, variables that measure kinship structures, family planning efforts and economic indicators, for example, could be added to the variables used in this article.

From a policy standpoint, governments should continue to strive to achieve universal mass education. The close association between education of girls and improved health and social well-being, including lower fertility, is strong enough to warrant sustained government investments. It is thus troubling that the growth of educational enrollments in Sub-Saharan Africa has not been keeping up with population growth in the 1980s: Whereas the

*Crude birthrates were used rather than total fertility rates because they are available for all the countries of the region; consequently, they allow for a broader assessment.

population of children of primary school age grew at an estimated 3.3 percent in 1980–1983, enrollment in primary school grew by only 2.9 percent.*[30] If enrollments continue to stagnate, it is unlikely that equality in girls' and boys' access to education will continue to increase.

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*The 2.9 percent figure is a weighted average for Sub-Saharan Africa. However, 23 of the 39 countries had enrollment expansions that kept pace with population growth or exceeded it. The weighted average is pulled down by Nigeria, the largest country in the region, which had an enrollment growth rate of only 1.1 percent.

"The MEXFAM Community Doctors . . ."

(Continued from page 99)

Another aspect is the philosphy of the sponsoring organization. The Mexican experience seems to indicate that a legitimate interest in working with the community and an interest in integrating projects with basic community health care, as opposed to providing family planning services alone, are helpful to success. In addition to providing close supervision and support, organizations sponsoring this kind of project will also find that it demands flexible management and quick responses to new opportunities and changing situations.

After three years of experience, the project seems well on the way to being a successful new strategy for integrating family planning with basic health services in low-income areas. Many communities throughout Mexico that had no access to basic health services are now receiving them, and many doctors are productively employed in areas where no physicians were available before the project began. With the prospect of replicating these results in other countries throughout Latin America, the project has even more potential for bringing family planning and general medical services to where they are needed most.

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Document

Gandhi Addresses the World on Family Planning

On September 20, 1989, the 21st biennial world conference of the International Union for the Scientific Study of Population was opened in New Delhi by Indian Prime Minister Rajiv Gandhi. His speech touched on many themes, including the benefits for the entire world, developed and developing countries alike, of greater efforts at global environmental protection and nuclear disarmament. However, he also discussed in detail some of the shortcomings of the Indian family planning program, and some new steps that the Indian government will be taking to improve the program's effectiveness. The following are selections from his speech.

. . . In 1951, India became the first country in the world to have an official, government-sponsored family planning program.

The cruel paradox is that in the 10-year period 1971–1981, the growth of population in India was the highest ever recorded in the history of the country. The fall in the death rate has been so dramatically more significant than the fall in our birthrate that, despite an impressive measure of success in spreading our family planning program, the overall growth of population has surged forward. In the current decade, there are some indications [that] the rate of growth of the population [has] moderated, but there is still cause for deep concern and need for a fresh appraisal of everything we have done so far. It is evident that the answer does not lie in applying more of the same. We have to see what changes of emphasis or alternative options are necessary to achieve our objectives. Indeed, if a thorough overhaul is required, we should be prepared for it. It is not enough to have been the world pioneer in family planning. It is essential for us to be also in the forefront of success. So large is India's share of the world population, and so significant is our contribution to world population growth, that it would not be too much of an exaggeration to say that a solution to India's population problem would, in large measure, amount to a solution of the world's population problem.

The single most important lesson that we and the world have learnt in the last four decades is that the answer to population growth does not lie in some simplistic or mechanical attempt to bring declining birthrates in equilibrium with declining death rates. In other words, it is not the activities of the agencies involved in family planning that uniquely determine the outcome of the family planning effort. More realistically, it is the nexus between development and its impact on the people that determines the success or failure of family planning programs. . . . That is to say, the mechanics of any family planning program have to be set in the context of the development process as a whole. . . .

One probable cause of the surge in population growth in India in the decade 1971–1981 was, perhaps, the relatively low growth rate of the economy in a decade marked by war with Pakistan, two severe droughts and a period of political instability. In the [1980s], there has been a significant upswing in growth rates, taking our average annual growth rate to over five percent in the current VIIth Five-Year Plan Period and poising the economy on the threshold of an even higher rate of growth in the forthcoming VIIIth Five-Year Plan.

The acceleration of economic growth has been accompanied by the launching or fruition of a whole series of programs of direct poverty alleviation and social development. A Minimum Needs Program, rural employment guarantee programs and family asset creation programs for those below the poverty line have resulted in a sensible decrease in absolute and relative levels of poverty. Particular attention has been paid to the education of girls and [to] adult literacy for women. Care has been taken to . . . enhance the status of women in our society.

Nutrition programs for infants and children and supplementary feeding for pregnant and lactating mothers have lowered infant mortality and child mortality rates, [as well as] the survival and health of mothers. The primary health care network extends throughout the country, and the Auxiliary Nurse Midwife has become the fulcrum of the health and family welfare delivery system at the grass-roots [level]. Our proudest achievement in recent years has been the universal immunization program. Voluntary organizations and government together have helped women better organize and equip themselves for employment and equitable wages, training and skills formation, self-employment and cooperative activity and greater control over economic assets and income generation. . . .

The lesson to be learnt from all this is that family planning programs should be regarded as part of the development process and not as autonomous programs. For developed countries, the lesson to be learnt is that population control objectives cannot be attained by increasing financial assistance for population programs while curtailing development assistance as a whole or restricting the access of developing countries to the markets of the developed. For developing countries, the lesson to be learnt is that there has to be a holistic perception of the development process, of which population policy constitutes but one component, albeit a significant component.

Even a cursory examination of demographic trends in a country as vast and varied as India would indicate that the nature of the demographic problem varies immensely from one part of the country to another. [Over] the decade 1971–1981, population growth rates were as low as 17.5 percent in Tamil Nadu and as high as

33 percent in Rajasthan. The birthrate not only differs significantly between states but also between rural areas and urban areas within states and between states. Thus, the estimated 1987 birthrate in rural India is as low as 21.5 per 1,000 in Kerala and over 39 per 1,000 in Uttar Pradesh. In urban India, West Bengal has a low of 21 per 1,000 and Uttar Pradesh a high of 32 per 1,000. When it comes to such crucial parameters of population policy as fertility rates in different age-groups, we find the variations even more dramatic. For example, [among 15–19-year-olds], the age-specific fertility rate is just 23 per 1,000 in Punjab but right up to 144 per 1,000 in Andhra Pradesh. In the next age-group of 20–24, however, the relatively prosperous and progressive states of Haryana and Punjab jump almost to the top of the ladder, but decline for subsequent age-groups. Similarly, there is no homogeneity to the pattern of death rates or the decline in death rates. In Kerala, the low death rate is comparable to Scandinavian standards, being as low as six per 1,000, as against more than 15 per 1,000 in rural Uttar Pradesh. . . .

It is thus clear that there is no homogeneity in the parameters of population growth in the country as a whole and, therefore, the all-India averages are something of a statistical illusion. There are vast variations from one region to the other, from one state to the other, even [from] one district to another.

The implication is that there is little scope for a uniform all-India population program, whether in regard to actions that operate on the birthrate or in regard to actions that operate on the death rate. Yet, to a very large extent, our family planning programs are more or less uniform throughout the country. Virtually the same package is delivered to the high population growth areas as to the low population growth areas. Only tentative beginnings have been made in area-specific projects, largely concentrating on nuances of infrastructure requirements rather than [on] sociologically significant features. There is little fine-tuning for such critically important factors as variations in the nuptiality pattern or in the average age at marriage. There are virtually no adequate or satisfactory statistics available for differences in regard to the parameters of fertility between different socioeconomic groups or ethnic groups within any given regior The administration of family planning is concentrated too much on the chasing of targets, imposed virtually uniformly throughout the country, rather than [being] based on sensitivity to, or even knowledge of, the differential impact of the same programs on different regional, socioeconomic and ethnic groups. . . .

Uniform norms of planning are not a characteristic only of planning for population control. The practice of [following] uniform norms has been characteristic of our planning in all sectors. In agriculture, we have broken this syndrome by dividing the country into 15 identified agro-economic zones, so as to tailor agricultural policy to the specific requirements of each of the zones. The time has come for a similar approach to population policy: We need to divide the country into different zones, where the relevant parameters are approximately homogeneous, and adapt policies and programs to the specific characteristics of these different zones. We would need to go further and, within each zone, adapt programs to the specific requirements of different socioeconomic and ethnic groups. Through such a differentiated approach to the demographic diversity of India, we will perhaps succeed in effecting a closer connection between the achievement of program targets and the realization of policy objectives.

We also have to recognize that, despite all our efforts, the family planning program remains essentially an official, government-sponsored program and not a people's program. Successful family planning is such an intensely personal, private matter that government agencies can, at best, contribute to raising awareness, creating an ethos and making available the required supplies, but the success of the program depends upon the personal and private decisions of a myriad individual human beings. What we need is congruence or convergence between the national objective of population stabilization and each couple's perception, especially the woman's perception, of the desired family size. This perception is most influenced by the values and ethos of the local community or neighborhood. How could this be determined monolithically by a central agency? It has to be devised and determined at the grass-roots [level], in the villages, slums and settlements where the people live.

Therefore, there has to be a great degree of decentralization in the implementation of the program so that awareness, ethos and motivation are created more by the local neighborhood than by some remote official agency. We have recently introduced two major constitutional amendment bills in Parliament to revamp, recast and rejuvenate our institutions of local self-government in the villages and urban settlements of India. Through these bills, we hope to assure both democracy at the grass-roots [level] as well as the devolution of powers and the assignment of responsibilities to institutions of local self-government for their own development.

Family welfare is one of the most important subjects being entrusted to these institutions. To the extent that it is the people themselves and their representatives who will determine the contours of the family planning program to be delivered at the community level to each local community, we might expect a far greater degree of responsiveness to diverse local conditions than has been evident so far. By the same token, we might anticipate a far greater measure of success in linking the implementation of programs to specific results in terms of lowering the birthrate and thus the rate of growth of population. The revolution in local self-government bids fair to promote a revolutionary decline in birthrates in India.

. . . At present, a host of different official agencies, operating independently of each other, despite their inevitable interlinkages, are approaching the same target group of women and children with little cooperation and coordination among themselves. The net result is that delivery costs eat up a vast proportion of program resources, and the absence of a holistic approach sharply reduces the impact of these programs. We are attempting to bring all the different programs together in either a single or [a] well-coordinated [multiple] delivery system, and to link that delivery system to our new institutions of local self-government, which provide for the reservation of 30 percent of seats for elected women representatives in all local bodies. Family planning will be an integral element of this system.

The program will thus get tied in at the grass-roots level with the development process as a whole, and be part of a planning and implementation process that intensely involves the people's own participation, including the participation of women and all [of] the weaker sections in our society. I would hazard the prophecy that a delivery system run and supervised by the poor, deprived and largely illiterate people of India will prove far more effective than the paternalistic model of planning, administration and implementation that we have relied upon so far. . . .

DIGEST

Poverty and Underdevelopment, Not Islam, Are Key To High Fertility Rates Found in Muslim Nations

The world's 47 Islamic nations and territories are characterized by high levels of fertility and mortality, rapid rates of population growth and high proportions of young people under age 15. At its current growth rate , the Islamic population of the world will double in size in just one-quarter of a century. However, these trends are not the result of Islam per se, but of the degree of economic underdevelopment seen in these countries. These are some of the conclusions of a recently published, comprehensive analysis of the demographic dynamics of the Muslim world.[1]

Forty countries or territories have clear Muslim majorities,* and another seven with Muslim minorities of 25–49 percent.† Nine additional non-Islamic countries‡ have sizable Muslim minorities, representing less than 25 percent of the total but consisting of at least two million people. (Three of these countries—China, India and the Soviet Union—have roughly 154 million Islamic citizens.) The Islamic nations (virtually all of them developing countries) are dispersed over an exceptionally wide and varied geographic area. Twenty-two are located in the Middle East and account for nearly one-third of all Muslims, and 17 are in Sub-Saharan Africa and include one-quarter of the Islamic population. Four countries in southern Asia contribute roughly another quarter, and three in Southeast Asia contain the remainder, including the inhabitants of the single most populous Islamic nation, Indonesia. Finally, only one European country (Albania) has a predominantly Muslim population. Because of this geographic distribution and the resulting diversity in culture, religious practice, level of socioeconomic development and ethnic background, generalizations about the demography of Islam, although useful, will always be imperfect.

Fertility rates vary considerably within the Muslim world. They are highest in Sub-Saharan Africa, where the total fertility rate (TFR) averages 6.6 lifetime births per woman. Southern Asia and western Asia are the two regions with the next highest TFRs among the Islamic states. The Islamic nations in each of these regions have higher fertility rates than the other developing countries in the area, a pattern different from that found in Sub-Saharan Africa, where the entire region, not just the Islamic states, is characterized by very high fertility. In Southeast Asia, however, another pattern emerges, in which the Islamic states have far lower fertility than the other countries in the region. Finally, Albania's TFR of 3.3 makes that nation's fertility rate the highest in Europe.

Throughout the Islamic world, the *Sharia*—the collection of Islamic laws—governs religious and civil life. With specific reference to social relationships, Islam strongly encourages marriage for those who can afford it, and supports male dominance in society, although "fairness and compassion for women" are also required. According to the author of the report, the degree to which governments identify with Islam varies widely: In Iran and Saudia Arabia, for example, religious courts administering the *Sharia* are the only judicial system, while in states such as Algeria and Pakistan, Islamic law complements secular law. Islam itself does not expressly prohibit the practice of contraception, although several Muslim countries object to abortion and sterilization. Moreover, since Islam lacks a single authority or bureaucracy that dictates or regulates religious law, there can be as many Islamic interpretations on birth control as there are clergy willing to make them.

Of the 18 Islamic countries for which data were available, 39 percent allow sterilization on request, another 39 percent permit the procedure for medical reasons and 22 percent prohibit it outright. Stringent family-size requirements for sterilization are imposed by several Islamic states, such as Iraq (seven children) and Jordan (six children); these limits are far higher than any regulating sterilization in non-Islamic nations. With reference to specific government attitudes toward population growth in their countries, half of the Islamic states are satisfied with their rate of population growth, 40 percent feel that it is too high and 10 percent claim that the present rate of growth is too low (even though five of these countries have annual growth rates of 3.2 percent).

To put the demographic situation of Islamic nations into global perspective, the author of the report compared their demographic variables with those of other developing countries and with the (mostly Western) developed countries (Table 1). As of 1988, the crude birthrate (CBR) among the Islamic nations—42 live births per 1,000 population—was 25 percent higher than that of other developing nations and 221 percent higher than that of the developed nations. This high birthrate reflects an equally high TFR of six lifetime births per woman.

The overall crude death rate in Islamic nations is over one-third higher than that in other developing countries. However, because the death rate has been declining and high fertility has continued, growth rates in the Islamic nations have risen dramatically: Their current overall annual growth rate is 2.8 percent, which means

*Afghanistan, Albania, Algeria, Bahrain, Bangladesh, Brunei, Chad, Comoros, Djibouti, Egypt, the Gambia, Gaza, Guinea, Indonesia, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Maldives, Mali, Mauritania, Morocco, Niger, North Yemen, Oman, Pakistan, Qatar, Saudi Arabia, Senegal, Sierra Leone, Somalia, South Yemen, the Sudan, Syria, Tunisia, Turkey, United Arab Emirates and Western Sahara.

†Burkina Faso, Côte d'Ivoire, Ethiopia, Guinea-Bissau, Malaysia, Nigeria and Tanzania.

‡Cameroon, China, Ghana, India, the Philippines, Thailand, the USSR, Yugoslavia and Zaire.

that the world's Islamic population would double in the next 25 years and thus account for a full 23 percent of the world's total population. Islamic nations are now growing 22 percent faster than the rest of the developing world, and 833 percent faster than the developed world.

Two additional factors may also have a pronounced impact on the growth of the Islamic nations. Women throughout the Muslim world generally marry early; fully one-third of all Islamic brides marry before age 20. They also are only half as likely as women in other developing countries to practice contraception, with just 20 percent of currently married Islamic women using a contraceptive method. In addition, 43 percent of the population in the Islamic world is under age 15, compared with 39 percent in the rest of the developing world and 20 percent in the developed world (not including Eastern Europe). Thus, even if fertility rates in Islamic nations were to drop markedly, to near replacement levels, the current age-composition (a consequence of past high fertility) would assure continued population growth halfway into the next century.

Islamic nations are still predominantly rural societies. Overall, 40 percent of the population lives in urban centers, with the Islamic nations of Sub-Saharan Africa, Southeast Asia and southern Asia having especially low proportions of their people living in urban areas. Nonetheless, economic hardship in rural areas has resulted in increasingly large numbers migrating to the very few urban centers, causing severe overcrowding. The report points out that while none of the world's 20 largest cities were located in an Islamic nation in 1970, projections suggest that by 2000, five—Cairo, Dacca, Jakarta, Karachi and Teheran—will be in Islamic countries.

Some of the world's poorest and richest nations are represented in the Islamic world. In his examination of the relationship between socioeconomic factors and demographic variables, the author found that once the effects of an oil-based economy are controlled for, the most important correlate of per capita income is the rate of population growth, followed by the ratio of girls to boys enrolled in secondary school (an indicator of the status of women). Thus, income increases as the rate of population growth slows and the status of women rises. On the other hand, a regression analysis that controlled for religion, region and status of women revealed that changes in per capita income had little impact on fertility. However, an analysis that controlled for religion, per capita income and region showed that women's status accounted for 34 percent of the variation in TFRs within the developing world.

In the analysis of two proximate fertility determinants—contraceptive prevalence and the proportion of women who marry as teenagers—a nation's geographic location (e.g., being in Sub-Saharan Africa) was found to be more important than being Islamic in explaining the fertility differences among developing nations. Outside of Sub-Saharan Africa, however, being an Islamic nation was a more important factor in accounting for national fertility differences. Contraceptive use had by far the strongest association with fertility levels, and after controlling for contraceptive use, the proportion of young women married and geographic region, the author found that no demographic variable unique to Islamic nations accounted for the differences in fertility levels.

The results of another analysis confirmed that women in Islamic countries are especially disadvantaged. On an index of women's status that combined demographic, health, education and labor-force variables for 99 countries, 16 of the 20 lowest scoring countries were Islamic. In addition, only 58 girls for every 100 boys are enrolled in secondary schools in Islamic nations. Again, indicators of the status of women fluctuated more by geographic region than by religious affiliation; thus, the status of women was lowest in the southern Asian nations, regardless of whether or not a given society is predominantly Muslim.

Despite recent declines in mortality and morbidity throughout the Islamic nations, the world's highest mortality levels are still found in predominantly Muslim regions, such as the western coast of Africa south of the Sahara, the Horn of Africa and the southwest corner of the Arabian peninsula. The author broke down mortality indicators according to income level, and found that mortality levels (both infant and maternal) and life expectancy fluctuated according to income in the same pattern for both Islamic and non-Islamic developing countries. He concluded that "the high rates of death in these equatorial Islamic nations have little, if anything, to do with Islam. The reasons are found in poverty and underdevelopment. . . ."

In his discussion of fertility in the Islamic world as a whole, the author again concludes that Islam per se is not responsible for the demographic situation in these countries; the explanation lies in the historical, social and economic development of the nations in today's Islamic world.

Table 1. Demographic characteristics of Islamic nations, other developing nations and developed nations, 1988

Characteristic	Islamic	Other developing	Developed*
No.	47	94	25
Avg. population (in millions)	21.2	30.3	31.8
CBR (per 1,000)	42.1	33.6	13.1
CDR (per 1,000)	13.8	10.1	9.4
Rate of natural increase (%)	2.8	2.3	0.3
TFR	6.0	4.5	1.7
Life expectancy (in years)	55	62	75
Infant mortality rate (per 1,000 births)	104	63	10
% of population under age 15	43	39	20
% urban	40	43	74

*Not including the Soviet Union and the nations of Eastern Europe (with the exception of Albania, which is included with the Islamic nations).

These nations are clearly in the early stages of fertility transition, a situation the author views as "a consequence of the recency of social and economic development in nearly all Islamic nations." He comments that "there are few demographic patterns in Islamic nations that appear to be a direct result of religious influence," and that nothing specific about the Islamic religion prevents a nation from reaching the level of socioeconomic development that leads to fertility declines. At least for the short term, according to the author, Islamic nations will be hampered by the high growth rates built into the young age structure of their populations. Nevertheless, the social change that usually decreases fertility is already at work in the Islamic world and, although "it may take place slowly, . . . once it begins, it usually gains its own momentum."—*L. Remez*

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In Morocco, Fertility Is Declining and Method Use Rising, DHS Finds

Fertility levels are high but declining in Morocco, and younger women are marrying and bearing children later than did their older counterparts. Between 1980 and 1987, the average number of children desired by Moroccan women fell from 5.0 to 3.7, while the total fertility rate (TFR) dropped from 5.9 to 4.8 births per woman. Currently, 36 percent of married women

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practice contraception, and the pill is the most commonly used method. These are some of the highlights of the Enquête Nationale sur la Planification Familiale, la Fécondité et la Santé de la Population au Maroc (ENPS), carried out in 1987 among a sample of 5,982 ever-married women aged 15–49.[1]

The kingdom of Morocco, a North African country of 20.4 million, is surrounded by the Mediterranean Sea and the Atlantic Ocean to the north and west and is bordered by Algeria to the east and Mauritania to the south. Berbers and Arabs constitute the two largest ethnic groups in the country, and Islam is the predominant religion. The vast majority (83 percent) of Moroccan women have had no schooling; urban women are much more likely than rural women to have ever attended school (35 percent vs. four percent).

Marriage and Fertility

In 1987, the median age at marriage among women 25–49 was 18.5 years, up from 17.2 in 1980. On average, women who had attended secondary school married almost five years later than did women who had attended only primary school (24.9 vs. 20.2 years) and seven years later than did those who had had no schooling at all (24.9 vs. 17.8 years). Moreover, urban women married 1.5 years later than did rural women (19.3 years vs. 17.8).

An indication of trends in marriage timing is the proportion of women in different age-groups who are married. In 1987, only 13 percent of women aged 15–19 were married, compared with 60 percent of such women in 1960. And whereas almost all women aged 25–29 in 1960 had married, only 75 percent of such women had done so by 1987. Nevertheless, marriage remains universal in Morocco: By the age of 35, all women have married at least once.

At the time of the survey, the median age at first birth among women 40–49 was about 20, among those 30–39 it was around 21 and among those 25–29 it was slightly more than 22. Whereas 30 percent of 40–44-year-olds had had a first birth before age 18, only 10 percent of 20–24-year-olds had done so. As with age at marriage, educational level appears to be the most important determinant of age at first birth: Women who had attended secondary school had their first birth three years later than did those who had received only a primary education (25.6 vs. 22.7) and five years later than did those who had never been to school (25.6 vs. 20.6).

In the five years preceding the survey, the overall TFR among Moroccan women 15–49 was 4.8 lifetime births per woman, down from a rate of 5.9 per woman in 1975–1979. By 1987, women aged 40–49 had had 7.1 lifetime births, on average, which when compared with the TFR confirms the trend toward lower fertility among younger women. The TFR among rural women aged 15–44 in 1987 was almost double that of comparable urban women (5.9 vs. 3.2 births per woman). Further, the TFR among women with no education was two births higher than that among women with a primary education (5.2 vs. 3.2) and almost three births higher than that among women with a secondary education (5.2 vs. 2.4).

Women who had had a birth in the three years preceding the survey breastfed for 14 months and experienced postpartum amenorrhea for nine months, on average. Although there were no significant age differences in the duration of breastfeeding, the mean duration of breastfeeding among rural women was considerably longer than that among urban women (16 months vs. 11 months). Further, women with no schooling breastfed much longer than did those with a primary education (15 months vs. 10 months) or a secondary education (seven months). Because urban women and educated women breastfeed for shorter periods than do their rural and uneducated counterparts, they experience a shorter period of postpartum amenorrhea and are consequently exposed to the risk of pregnancy sooner. Since the Muslim tradition dictates that women need observe postpartum abstinence for only 40 days, this practice does not have an appreciable impact on exposure to the risk of pregnancy.

Contraceptive Practice

Nearly all ever-married Moroccan women (98 percent) were familiar with at least one contraceptive method: The pill, the IUD and female sterilization were the best-known modern methods (familiar to 97 percent, 79 percent and 77 percent of the women, respectively), followed by the condom (60 percent), injectables (55 percent) and vaginal methods (23 percent). Of the traditional methods, periodic abstinence (52 percent) and withdrawal (47 percent) were the most widely known.

Fifty-seven percent of ever-married women had ever practiced contraception, with 52 percent having used a modern method and 22 percent a traditional method. Half of all ever-married women said they had used the pill at some time, far more than had ever relied on withdrawal, periodic abstinence, the IUD or the condom (11, nine, seven and six percent, respectively). An even smaller proportion of Moroccan women (two percent) had undergone sterilization. Women aged 15–19 were the least likely of any age-group to have ever used any method (29 percent), while those aged 35–39 were the most likely to have done so (65 percent).

In 1987, 36 percent of currently married women were using a method of contraception, up from 19 percent in 1980. Twenty-nine percent of currently married women were using modern methods, while seven percent relied on traditional ones. The pill, used by 23 percent of married women, is by far the most widely used method; fewer than three percent of married women relied on any one of the other methods. Those aged 30–39 were the most likely to be currently using a method (43 percent), and those aged 15–19 were the least likely (17 percent). Moreover, urban women were twice as likely as their rural counterparts to be using a method (52 percent vs. 25 percent); further, women with a secondary education were twice as likely as uneducated women to do so (66 percent vs. 31 percent).

Among married women who had stopped using a method of modern contraception, 26 percent said they had done so because of method failure, 22 percent cited menstrual irregularities and 20 percent reported that contraceptives had adversely affected their sexual relations. About one-third (31 percent) of married women who were not practicing contraception at the time of the survey said that they intended to use a method in the future. Of these, 60 percent said they would use the pill, 12 percent each expected to use the IUD or practice sterilization, five percent planned to use injectables, three percent intended to rely on other modern methods and eight percent believed they would use traditional methods.

The majority of currently married Moroccan women said they did not want to have another child soon: Forty-five percent did not want to bear any more children at all, while 22 percent wanted to wait at least two years until their next birth. The proportion intending to stop childbearing rises with the number of living children, and is higher among urban women (53 percent) than among their rural counterparts (44 percent). However, there is virtually no difference between educated and uneducated women in the

proportion who wanted no more children (50 percent vs. 47 percent).

In 1980, currently married women wanted 5.0 children, on average; by 1987, such women wanted a mean of 3.7 children. Urban women wanted slightly fewer children than did rural women (3.3 vs. 4.0). Women who had been to secondary school wanted slightly fewer children than did those with a primary education (2.8 vs. 3.1), and substantially fewer than those with no schooling (2.8 vs. 3.8).

Maternal and Child Health

Overall, 75 percent of women who had had a birth in the five years before the survey received no prenatal care. However, urban women were more likely than rural women to have consulted a health practitioner during their pregnancy (48 percent vs. 17 percent), and women with a secondary education were much more likely than their uneducated counterparts to have done so (73 percent vs. 18 percent). Only 27 percent of all women delivered their babies in a health facility; the remainder delivered at home, assisted either by a traditional birth attendant (58 percent) or by a relative or neighbor (15 percent).

Although infant and child mortality rates have declined over the past 10 years, they remain high: In 1987, the infant mortality rate was 73 deaths per 1,000 live births, while the child mortality rate was 31 deaths per 1,000 children 1–5 years of age. Urban infants were about one and one-half times less likely than their rural counterparts to die, and urban children aged 1–5 were about three times less likely than rural children to do so. The infant mortality rate was 86 deaths per 1,000 births among children born to women with no schooling, compared with a rate of 54 per 1,000 among those whose mothers had a primary education; similarly, the child mortality rate among those born to women with no schooling was 44 deaths per 1,000 children, while the rate among children whose mothers had a primary education was only 12 deaths per 1,000.—*J. Reich*

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Likelihood and Duration of Breastfeeding Have Increased Among Urban Women in Indonesia

Urban women in Indonesia have become more likely to breastfeed their infants in recent years, according to two analyses of survey data. In five urban areas, most women surveyed in 1983 had breastfed their youngest child, but the average duration of breastfeeding ranged widely, from 15 months to 24 months.[1] In 1976, 93 percent of women surveyed in Jakarta had breastfed their last child; in 1983, this proportion was 98 percent. The median duration of breastfeeding increased 38 percent between the two years.[2]

Breastfeeding in Urban Areas

In the 1983 Indonesian Contraceptive Prevalence Survey (CPS), currently married women aged 15–49 whose youngest child was three years of age or less were asked whether and how long they had breastfed that child. (Duration of breastfeeding was measured from the time of birth to the time when the child was completely weaned, regardless of whether supplemental foods were provided.) The survey was restricted to five metropolitan areas—Jakarta (the capital), Medan, Semarang, Surabaya and Ujung Pandang.

The vast majority of women in all five cities reported that they had been breastfeeding their baby at one month postpartum; the proportion ranged from 94 percent in Surabaya to 98 percent in Ujung Pandang. However, by 36 months postpartum, the proportion still breastfeeding varied widely by city: Fewer than 10 percent of women in Medan were still breastfeeding, compared with about 25 percent in Surabaya and around 30 percent in the other cities. The median duration of breastfeeding was shortest in Medan (14.9 months) and longest in Semarang (23.6 months); in Surabaya, Jakarta and Ujung Pandang, the respective durations were 18.1, 19.8 and 20.3 months.

In each of the cities, women were likely to have weaned their children significantly earlier if they had delivered at a clinic rather than at home, if they had been attended by a physician, a midwife or a nurse rather than by a traditional birth attendant, and if they had had more than an elementary education. Additionally, in every city but Medan, women who worked (either at home or outside the home) weaned their child significantly earlier than did those who did not work at all.

A multivariate (proportional hazards) analysis was used to adjust simultaneously for the effects of maternal age, education, workplace, number of live births, place of delivery, type of attendant, family planning knowledge, current pill use, access to family planning information and desire for more children. For each city, after every other factor was controlled for, either type of birth attendant or the place of delivery was significantly related to earlier weaning. In Jakarta, Surabaya and Semarang, women who had had a modern birth attendant weaned their child 1.5, 1.5 and 2.4 times earlier, respectively, than did those who had had a traditional birth attendant. In Ujung Pandang and Medan, those who had delivered in a clinic weaned 1.8 and 2.3 times faster, respectively, than did those who had delivered at home. In all the cities but Medan, mother's education (i.e., elementary or less vs. greater than elementary) was significantly related to the likelihood of earlier weaning (ranging from 1.7 in Jakarta to 2.0 in Ujung Pandang). In Jakarta and Surabaya, women who worked outside the home were also substantially more likely than those who worked at home to wean their child earlier (1.5 times each).

According to the researchers, the finding that duration of breastfeeding is lower among women who deliver in more modern facilities and with better-trained birth attendants has "important policy implications because circumstances surrounding delivery are amenable to intervention." The data indicating that prolonged breastfeeding is still prevalent in most areas bode well for a reversal of the decline, they believe, if programs to promote and teach about breastfeeding are developed and if rooming-in, prenatal and postnatal services are consistently provided.

Breastfeeding in Jakarta

Another study contrasted data from the 1983 Indonesian CPS on breastfeeding practices of Jakarta women with comparable data from the 1976 Indonesia Fertility Survey (IFS). Because the CPS asked women about breastfeeding only if their youngest child was no older than three, the analysis of the 1976 IFS was restricted to data on women who fit that description.

The proportion of women reporting that they had begun breastfeeding after childbirth did not change greatly, rising from 93 percent in 1976 to 98 percent in 1983. The 1983 rate was higher than the 1976

rate in every age, education, parity, work-status and fertility-intention subgroup examined. In both years, the proportion breastfeeding declined between one and six months postpartum at a similar pace. However, between six and 24 months, the proportion declined less rapidly in 1983 than in 1976. Of the women surveyed in 1983, about 45 percent reported that they had still been breastfeeding at 24 months postpartum, compared with about 26 percent of those questioned in 1976.

The median breastfeeding duration in Jakarta increased from 14.4 months in 1976 to 19.8 months in 1983. The change was greatest among women with no education, from 15.7 months in 1976 to 36.0 months in 1983. Among women with more than an elementary education, however, the increase was only 0.9 months. Patterns by the education level of the child's father were similar: Among those with no education, mothers' median breastfeeding duration rose 16.5 months between the two surveys, compared with an increase of 3.8 months among those with more than an elementary education. The median duration of breastfeeding decreased 1.1 months among women who worked at the time of each survey, while it increased 6.5 months among the others. The only other factor that appeared important was the number of living children: The increase in median duration among women with two or fewer children was 4.2 months between the surveys, compared with 10.2 months among those with three or more children.

The investigators point to efforts by Indonesia's National Family Planning Coordinating Board to reduce fertility as a possible explanation for the increase in breastfeeding duration between 1976 and 1983: If women generally breastfeed until their next pregnancy, "fertility reduction might prolong breastfeeding." They note that national programs to promote breastfeeding, begun in 1977, may also have been a factor. However, citing the study of breastfeeding in metropolitan areas, they argue that "these programs have failed to convey the correct messages or have inadequately reached the working or better educated women who delivered mostly in hospitals or clinics."—*P. Rind*

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Bangladeshi Midwives Need Training to Counter Dangerous Birthing Practices and Misinformation

Traditional midwives in rural Bangladesh lack basic knowledge about labor and childbirth, according to a recent survey. They are unaware of appropriate sterile technique for cutting the umbilical cord and removing the placenta and are uninformed about nutrition intake needs during pregnancy and immediately afterwards. The investigators conclude that since midwives deliver the overwhelming majority of babies in rural Bangladesh, special training to counter potentially harmful practices is necessary if these women are to provide effective maternal and child health services in areas with few other health care alternatives.[1]

In 1986, the Christian Commission for Development in Bangladesh started a midwifery training program as part of its efforts to improve community-based health care and the obstetrics services offered by traditional birth attendants. Interviews were conducted with 242 of the midwives selected for training. The midwives were asked about their personal characteristics and beliefs, their knowledge of pregnancy and childbirth, and their midwifery experience and practices.

A substantial majority of the traditional midwives were over age 30 and either married or widowed. Reflecting the low status of the profession, eight out of 10 were illiterate. Moreover, many of these women had learned midwifery from informal sources, especially from female relatives (cited by nearly three-quarters of those surveyed). The majority (65 percent) mentioned indigestion or vomiting as a sign of pregnancy, whereas only 35 percent cited amenorrhea. An even larger majority (80 percent) could not offer any symptom as a sign of a complication of pregnancy.

All of the midwives indicated that they tied the umbilical cord with thread, but most (61 percent) did nothing to sterilize it. More midwives used a razor blade than a bamboo sheath to cut the umbilical cord, but 43 percent said that they did not sterilize the cutting instrument at all and a similar percentage did so ineffectively by washing it in hot water. After cutting the umbilical cord, the midwives applied such materials to the navel as (in descending order of mention) baked soil gutted from an earthen oven, dettol (an antiseptic liquid widely used in Bangladesh), mustard oil, sulfur dioxide, ashes of burned clothes, red soil, dried cow dung, saliva and smashed betel nuts.

In response to questions on aiding the expulsion of the placenta, 32 percent of the midwives said that they pull it out by inserting their hand into the womb, 33 percent encourage the expulsion by putting hair or garlic into the mother's mouth or by inducing vomiting, 22 percent apply mustard oil near the mother's navel or manipulate her waist, 11 percent give the mother salted hot water or hot milk and 10 percent say that they put some materials on top of the house (e.g., dishes or pots used for cooking or measuring rice). In addition, eight percent of the midwives admitted referring the mother to another source of care (either modern or traditional health care providers).

The midwives were also asked about their perceptions of the causes of neonatal morbidity and mortality. The majority (57 percent) correctly believed tetanus to be a cause of neonatal death. However, even though 12 percent correctly identified the improper cutting of the umbilical cord as a source of tetanus, an equal proportion claimed that the mother's life-style had caused it and twice as many (24 percent) blamed evil spirits. (Since there could be some overlapping among these categories, the percentages do not necessarily add up to 100.) Postpartum dietary restrictions mentioned by the midwives included many protein-rich foods, such as all or certain kinds of fish, meat or eggs, legumes, and milk or sweets. With regard to the baby's nutritional intake, the majority of midwives (61 percent) recommended that the mother withhold breastfeeding for the first 1–3 days after birth.

The researchers affirm that many of the midwives' beliefs and practices "could be potentially dangerous and could imperil the life of both mother and child." Even though a majority of midwives correctly identified tetanus as a source of neonatal mortality, more than one-third attributed the infection to supernatural and nonscientific causes, while one in eight cited un-

sterile technique. The authors point out, however, that some of the practices (such as cutting the umbilical cord with a razor blade instead of with the traditional bamboo sheath, and washing the cutting implement in hot water to reduce the risk of infection) appear to have a scientific basis. They conclude that, given the severe shortage of medical and financial resources in rural Bangladesh, the most feasible approach to improving maternal and child health care is through the midwife, who performs the vast majority of deliveries in rural Bangladesh and is culturally accepted and accessible. Thus, the researchers recommend that midwives be trained about "unnecessary complications and harmful practices surrounding childbirth" so that they can be "more effective in providing basic health services to mother and child . . . in every village community."—*L. Remez*

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Sri Lanka Family Size Declines; Estates Show Greatest Health Needs

Fertility has fallen substantially in Sri Lanka since the early 1960s, with the total fertility rate (TFR) having decreased from five births per woman in 1963 to fewer than three in the period 1984–1987. Marriage and first birth are occurring 2–3 years later, on average, than they did a few decades before. The small decline in fertility that has occurred since 1983 can be attributed almost entirely to decreased fertility and the prevalence of sterilization among women over 30. Overall, contraceptive awareness and use are high, with sterilization the most commonly used contraceptive method. The Sri Lankan government, which has provided incentives for sterilization by paying for patients' transportation, lost workdays and incidental expenses, is now trying to increase the acceptance and accessibility of temporary modern methods. These are some of the findings from the 1987 Sri Lanka Demographic and Health Survey (SLDHS).[1]

Sri Lanka (formerly Ceylon) is an island off the southern coast of India. About half of its people live in the "wet zone" districts in the southwest, which account for only 20 percent of total land area. Many estate plantations of tea, rubber, coconut and spices are located in this wet zone. Since the 1930s, there has been considerable migration into the northern dry zone, which supports paddy cultivation. Sri Lanka is a multiethnic country: According to a 1981 census, 74 percent of the residents are Sinhalese, 13 percent are Sri Lankan Tamils, six percent are Indian Tamils and seven percent are Sri Lankan Moors; another one percent are Burghers, Malays or of another ethnic group. In general, the Sinhalese are Buddhist, the Tamils are Hindu, the Moors are Muslim and the Burghers are Christian. By the middle of 1987, Sri Lanka had an estimated total population of 16.2 million. The growth rate for Sri Lanka for 1971 through 1981 was 1.7 percent, lower than the projected 2.2 percent because of recent migration due to employment opportunities in Gulf countries and because of the repatriation of Indian Tamils.

Marriage and Fertility

The 1987 SLDHS data are based on interviews with 5,865 ever-married women aged 15–49 from households in seven Sri Lankan regions, or zones. Interviews could not be conducted in the northern and eastern zones because of civil disturbances; these regions contain about 14 percent of the 1986 estimated population of Sri Lanka. Overall, 93 percent of the women interviewed are currently married, three percent are separated or divorced and four percent are widowed. Women's median age at marriage has risen from 20–21 among those aged 40 and older to 23 among those aged 25–39. Only about 30 percent of women aged 20–39 were married by the age of 20, compared with 41 percent of those aged 40–44 and 50 percent of those 45–49.

Age at first birth has also risen, with the greatest change occurring in urban areas. Overall, 23 percent of women aged 45–49 had their first child before the age of 18, compared with just six percent of those aged 30–34 and five percent of those aged 20–24. The median age at first birth among women in Colombo (the capital) and other urban areas is 25.3 and 26.5, respectively, while among rural women it is 23.7 and among women on the estates it is 22.5. The SLDHS data also reveal that 38 percent of women 25–29 and nearly one-fifth of those 30–34 have not given birth.

The TFR in Sri Lanka ranges from a low of 2.1 lifetime births per woman in Colombo and other urban areas to a high of 3.3 on the estate plantations. Across all sectors and zones, the TFR declined from 5.0 births per woman in 1963 to 3.1 in 1981–1983 and 2.7 in 1984–1987. The largest decline occurred in rural, nonestate areas, where the TFR fell from 3.2 in 1981–1983 to 2.8 in 1984–1987. The mean number of children ever born among Sri Lankan women aged 45–49 is 4.9, and if current age-specific fertility rates remain unchanged, the average number of children ever born will be 2.7 by the time new cohorts entering the reproductive period reach the ages of 45–49.

When all ever-married women are considered, the average number of children ever born is 3.0, representing a decrease from 3.9 in the 1975 Sri Lanka World Fertility Survey. Across all ages, only one-third of women in the 1987 SLDHS have four or more children, compared with half of the women in 1975. Age at marriage is inversely related to the average number of children ever born, which ranges from a high of 5.6 for women who married before age 15 to 2.1 for women who married between the ages of 25 and 27.

Contraceptive Knowledge and Use

Knowledge about contraceptives (including prompted knowledge) is high among Sri Lankan women: For all ever-married women aged 15–49, nearly 99 percent know of at least one modern method. Female sterilization is known by nearly all (98 percent) of ever-married women. The pill and male sterilization are also well-known, by 93 and 91 percent of women, respectively. Fewer women (83 percent) have heard of the IUD and 72 percent know about condoms. The diaphragm, foam or jelly and NORPLANT® are known by the smallest proportions of women—14 and six percent, respectively. Most women who know about the pill, the IUD, injectables or sterilization cite government hospitals or clinics as sources. Traditional methods are generally less well-known: Just 61 percent of women are aware of periodic abstinence as a method, and fewer than 40 percent know about withdrawal.

Ever-use of any method of contraception among ever-married women rose from 47 percent to 69 percent between 1975 and 1982. However, between 1982 and 1987, ever-use of any method increased only slightly, from 69 to 72 percent. Among currently married women, the proportion currently using contraception increased from 34 percent in 1975 to 58 percent in 1982 and 62 percent in 1987. (Among these users, approximately two-thirds use modern methods and another one-third rely on traditional methods.)

The greatest change in contraceptive use among currently married women is a nearly threefold increase in the proportion who have been sterilized, from 11 percent

in 1975 to 30 percent in 1987. In contrast, the proportion of currently married women using temporary modern methods has remained about the same—9.6 percent in 1975, 9.9 percent in 1982 and 10.8 percent in 1987. For the same three years, the proportions of currently married women using traditional methods (rhythm, withdrawal or other methods) were 14, 26, and 21 percent, respectively.

Among contraceptive users, the proportion relying on temporary modern methods has decreased, from 28 percent in 1975 to 18 percent in 1987. (Although use of the pill and injectables rose slightly, condom use declined, and IUD use dropped dramatically, from 15 to three percent.) Of all women using modern methods, however, the proportion choosing sterilization increased steadily, from 31 percent in 1975 to 38 percent in 1982 and 48 percent in 1987; most of this increase occurred among women over 30. Traditional methods were practiced by 41 percent of married women using a method in 1975 and by 34 percent in 1987; this apparent decline may be related to differences in the way in which prolonged abstinence was classified in the two surveys. Periodic abstinence, or rhythm, was used by one-quarter of all users in 1975, 1982 and 1987.

Between 62 and 68 percent of currently married women living in Colombo, other urban areas or rural areas use some method of contraception, compared with 51 percent of women on the estates. However, a higher proportion of women living on the estates who use a method have been sterilized (30 percent vs. 23–25 percent in the other areas). The prevalence of male sterilization (10 percent) is about twice as high on the estates as in other regions.

Overall, contraceptive use was found to be strongly linked to both education and parity. Among women with no education, five percent use modern temporary methods and 10 percent use traditional methods; these proportions are 14 percent and 31 percent, respectively, among women with more than a secondary education. On the other hand, education is inversely related to the prevalence of sterilization: Almost 40 percent of women with no education or a primary education rely on sterilization, compared with just 16 percent of women with more than a secondary education. Sterilization is strongly linked with parity as well: More than 50 percent of women with four or more children rely on sterilization as a method, compared with just two percent of those with one child and 18 percent of those with two children. Among women with two children, about one-third of those using sterilization rely on male sterilization. However, this proportion drops to one-sixth among women with more than three children who use sterilization as a method.

The mean ideal number of children given by both ever-married and currently married Sri Lankan women is 3.1, representing a decline from the mean of 3.8 reported in 1975. In addition, the desired number is almost exactly the same as the 3.0 mean number of children ever born to ever-married women aged 15–49. Among women with more than three children, the ideal mean given is slightly lower than the number of children they actually have; more than 85 percent of these women are either sterilized or say they want no more children. The mean number of children desired is directly related to age, is inversely related to education and varies according to region: Women younger than 30 report a mean ideal family size of 2.7 or less, while the ideal number given by women aged 45–49 is 3.8. The average ideal number of children given by women with no education is 3.5, while that given by women with more than secondary education is 2.7. By region, women living in Colombo give the lowest mean (2.8), while women on the estates give the highest (3.3).

The SLDHS data reveal that 23 percent of currently married Sri Lankan women are in need of family planning services, ranging from 15 percent of those living in urban areas other than Colombo to 25 percent of those on the estates. (These women are fecund, are not practicing contraception and either want no more births or want to postpone the next birth for two or more years.) Among currently married women who do not practice contraception, 38 percent intend to use a method in the future, 48 percent do not intend to do so and 13 percent are undecided.

Maternal and Child Health

During the 10 years preceding the 1987 survey, infant and child mortality in Sri Lanka decreased substantially. Between the periods 1972–1977 and 1982–1987, infant mortality dropped by 37 percent (from 40 deaths per 1,000 births to 25 deaths per 1,000 births), child mortality declined by 51 percent and mortality among all children under five declined by 41 percent. The percentage decline in infant mortality for males and females was 36 and 40 percent, respectively, while female child mortality dropped by 59 percent and male child mortality dropped by 40 percent. Children on the estates are at highest risk: The infant mortality rate of 58 per 1,000 births, the child mortality rate of almost 17 per 1,000 births and the under-five mortality rate of 73 per 1,000 births are all approximately twice as high as in other areas of Sri Lanka. The infant mortality rate among children born to mothers with no education (52 per 1,000 births) is 2.5 times higher than the rate among children whose mothers have more than a secondary education; the child mortality rate is nearly three times higher for those born to mothers with no education. Other variables associated with higher infant and child mortality include higher birth order (especially above four), shorter previous birth interval, male sex of the infant and extremes in the mother's age.

The SLDHS data suggest that prenatal care, tetanus toxoid injections and assistance at delivery by a trained medical practitioner have all reduced infant and maternal mortality in Sri Lanka. For approximately 97 percent of births between 1982 and 1987, prenatal care was provided by a doctor (33 percent), by both a doctor and a midwife (62 percent) or by a midwife alone (two percent). Sixty-six percent of all women who gave birth during the 12 months that preceded the survey received two doses of tetanus toxoid, and another 17 percent received one dose. Ninety-four percent of all births from 1982 to 1987 were assisted by a doctor, a nurse or a midwife.

Mothers who were surveyed were able to provide immunization records for 77 percent of children under age five. Nearly all of these children had been immunized for tuberculosis and four out of five had received three doses of diphtheria and polio vaccine. Only half had been immunized against measles; however, measles vaccinations were not available countrywide until 1985. The youngest children were most likely to be immunized: Of 82 percent of children aged 12–23 months for whom information was available, nearly all were fully immunized against tuberculosis, more than nine in 10 against diphtheria and polio and seven in 10 against measles. Two-thirds of all children at age 12–23 months for whom information was available were immunized against all of these diseases.

A national program to fight diarrheal diseases was begun in 1983 and was promoted throughout Sri Lanka by 1987. During this time, the Ministry of Public Health and private groups taught mothers how to

use a locally produced oral rehydration product. According to SLDHS responses from mothers of children under five, only about six percent of their children had had diarrhea in the past two weeks, including 11 percent of those younger than 12 months. Seventy-three percent of the children were taken to a medical facility for treatment, and nearly half of them were given oral rehydration salt solutions. Children aged 1–5 months and children living on the estates were the least likely to have received medical treatment.—*M. Witwer*

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Long-Term Pill Users Shown to Be at Higher Risk of Breast Cancer

A study from Great Britain exploring possible associations between oral contraceptives and breast cancer in young women has shown a trend of increasing risk of breast cancer among women who had used the pill beyond four years.[1] The recently released data join a welter of new studies on the topic of the pill and breast cancer, many of which have produced conflicting findings.[2] The major issue addressed by most of the studies is whether certain subgroups of women, such as those in whom breast cancer occurs at a relative early age, are more vulnerable as a result of oral contraceptive use.

A recent reanalysis of data from a Swedish-Norwegian case-control study that had previously reported total duration of pill use to be a risk factor for premenopausal breast cancer suggests that nulliparous women may be particularly susceptible to breast cancer if they are long-term pill users.[3] U.S. data from the Cancer and Steroid Hormone Study indicate, however, that even long-term use of oral contraceptives does not contribute to breast cancer risk among women who are already susceptible because of a family history of breast cancer.[4]

The British Study

An analysis of pill use and breast cancer risk by the UK National Case-Control Study Group involved women younger than 36 at diagnosis of breast cancer. The women came from 11 health regions in England, Scotland and Wales, and most were diagnosed between January 1, 1982, and December 31, 1985. A list of 1,049 women eligible for the study was compiled from local cancer registries, supplemented by information obtained from hospital registers.

Between January 1984 and February 1988, at-home interviews were conducted with the patients to obtain demographic characteristics, medical histories and details of personal habits such as smoking and drinking. The research hypothesis was not revealed to the women, who were told that they were participating in a general health survey. The interview information was supplemented by information from the records of the women's primary-care physicians. A woman who matched each breast cancer patient's age (within six months) was chosen from among the physician's other patients and was enrolled in the study as a control. Controls were selected only for patients who had been interviewed, and if the first control declined to participate, a second (or subsequent) control was selected using the same procedure.

Of the eligible patients, 755 were interviewed, for a response rate of 72 percent. Three percent of patients refused to be interviewed, three percent had moved out of the study area, 16 percent had died and seven percent were not permitted by their doctor to participate, mainly because they were too ill to be interviewed. The same number of controls were interviewed, 89 percent of whom were the first control selected. In the analysis, relative risks were adjusted for breastfeeding, as well as for such accepted breast cancer risk factors as age at menarche, nulliparity, age at first full-term pregnancy and family history of breast cancer.

Among breast cancer patients, 91 percent had used the pill at some time, compared with 89 percent of controls. A significant trend in risk of breast cancer was found with duration of oral contraceptive use: Women who had used the pill for no more than four years had no increased risk of breast cancer, but by the time women had used the pill for more than eight years, they had a risk of 1.7 relative to never-users; the trend with duration of use was significant at $p<0.001$. The same trend was found regardless of whether women were nulliparous or parous.

Examination of the data among parous women by duration of pill use before and after a first full-term pregnancy showed that using the pill after a first pregnancy increased the relative risk among long-term users over and above the risk associated with pill use before a first pregnancy. While women who had used the pill for more than eight years before a first full-term pregnancy (and who may also have used the pill after that pregnancy) had a risk relative to never-users of 1.4 (trend with duration of use significant at $p<0.05$), those who used the pill for a similar length of time after pregnancy (and who may also have used the pill prior to a first full-term pregnancy) had a relative risk of 2.0 (trend with duration of use significant at $p<0.01$). An association between breast cancer and pill use before a first full-term pregnancy has been reported in other studies, but this study is unique in reporting that pill use after a first full-term pregnancy contributes to breast cancer risk, even among women who had not used oral contraceptives before their first delivery.

The age at which pill use began (18 or younger, 19–21, 22–24 and 25 or older) had no effect upon the duration-of-use patterns established in the previous analyses; that is, in each age-group, there was a trend by duration of use, with the greatest risk existing among those using the pill for more than eight years. Neither did analysis of the data by recency of use (whether the women had taken the pill within three years of diagnosis, within six years, within nine years or within 12 years) have any substantial effect on duration-of-use trends. Examining the effect of a latency period on breast cancer risk by disregarding use within the three years prior to diagnosis, within six years, within nine years and within 12 years was also inconsequential to the patterns already established.

Oral contraceptives with at least 50 mcg of estrogen displayed a duration-of-use trend that was statistically significant ($p<0.001$), with those women who had used the pill for more than eight years having a relative risk compared to never-users of 2.6. The relative risk remained about the same when pill use in the three years prior to diagnosis was disregarded. Few women had used pills with less than 50 mcg of estrogen for more than eight years, and a trend toward increased risk with duration of use was only marginally significant ($p<0.10$). Progestin-only pills are used mainly during breastfeeding, and thus duration of use is short, but the available data indicated a protective effect against breast cancer after 12 months of use. Among women who used the progestin-only pill for more than two years, for example, the risk of breast cancer relative to never-users was 0.6 ($p<0.05$), but the finding is based on very small numbers of cases and controls.

The researchers suggest viewing with

caution those results showing that pills containing less than 50 mcg of estrogen may carry a lower risk of breast cancer and that progestin-only pills may even be protective. Low-dose formulations have been on the market for less time than pills containing 50 mcg or more of estrogen, and few women enrolled in the study had used them for long periods. Likewise, few had used progestin-only pills for prolonged periods.

If the increased risks found in this study are accurate, approximately 20 percent of breast cancer among women younger than 36 could be attributable to oral contraceptive use. The researchers note that while two breast cancer registries in England and Wales do show an increased incidence of breast cancer among women aged 25–34, the increase began in the early 1960s, too early to be explained by pill use. Whether women who are diagnosed with breast cancer at such an early age are different from the majority of women with breast cancer, who are not diagnosed until much later ages, or whether prolonged pill use at an early age might produce a persistent increase in risk that will continue as these women age is a matter of speculation.

The Swedish-Norwegian Study

Women less than 45 years of age who had had invasive breast cancer diagnosed between May 1984 and May 1985 were enrolled in a Swedish-Norwegian case-control study of the pill. Of the 473 breast cancer patients from the two countries who were eligible, 89 percent were interviewed regarding their demographic characteristics and reproductive and contraceptive histories. Controls (two for each Norwegian patient and one for each Swedish patient) were selected from population registries and were matched to patients by date of birth. Eighty-one percent of controls were interviewed, and data were analyzed for 422 patients and 722 controls.

An analysis of relative risk of breast cancer by duration of oral contraceptive use before a first full-term pregnancy was adjusted for a family history of breast cancer and a history of breast biopsy. Parous women who had used the pill showed no significant increase in risk of breast cancer relative to never-users, even if they had used the pill for eight or more years. Results were inconsistent among nulliparous women: Those who had used the pill for less than four years had a significant breast cancer risk of 2.8 relative to never-users, those who had used it for 4–7 years had a nonsignificant relative risk of 1.0 and those who had used it for eight years or more had a significant risk of 4.3.

When they examined the data by total duration of pill use, the investigators found that women who had used the pill for 8–11 years, with at least eight years of use prior to a first full-term pregnancy, had a significantly increased risk of breast cancer relative to never-users of 3.4. Women who had used the pill for 12 years or more, all of it after a birth, had a relative risk of 3.0. Further analysis revealed, however, that only the total duration of use made a significant contribution to risk, which increased by 17 percent for every three years of pill use, regardless of whether pill use occurred before or after a first pregnancy.

Since nulliparous women had a higher relative risk after eight years of pill use than parous women had after 12 years, the researchers conclude that "a full-term pregnancy may modify any increased risk possibly induced" by oral contraceptives; their findings also give some support to suggestions that nulliparous women "may be particularly susceptible to long-term exposure to oral contraceptives."

Family History of Breast Cancer

An analysis of oral contraceptive use among women with a family history of breast cancer used data from the Cancer and Steroid Hormone (CASH) Study, a population-based case-control research project conducted by the U.S. Centers for Disease Control with support from the National Institute of Child Health and Human Development. The CASH study collected data for two years, beginning in December 1980, on cancers of the breast, ovary and endometrium among women aged 20–54 living in eight geographical areas of the United States. It identified 5,889 women who received a diagnosis of breast cancer, 80 percent of whom participated in at-home interviews.

Controls, selected during the same two-year period in which patients received their diagnosis, were obtained by random telephone dialing of households in the same region as the patient. They were matched to patients by five-year age intervals. Of the 5,698 control women selected, 83 percent were interviewed, also at home, and 108 were then excluded because they had a previous history of breast cancer or they had reached 55 years of age before they were interviewed. The analysis of data compares 4,730 breast cancer patients with 4,646 controls.

Twelve percent of the breast cancer patients had a family history of breast cancer through a first-degree blood relative (mother, sister or daughter), and 16 percent had such a history through a second-degree relative (grandmother or aunt). Comparable figures among controls were six percent and 13 percent. Thirty-nine percent of patients and 47 percent of controls reported no family history of breast cancer, and 33 percent of patients and 34 percent of controls reported no known family history of breast cancer, although information for one or more relatives was incomplete. The data were adjusted for age, age at menarche, age at first-term pregnancy, parity, menopausal status and benign breast disease prior to oral contraceptive use.

No pattern of risk of breast cancer by duration of pill use (divided into two-year intervals with the final category being more than 10 years of use) could be discerned among women with either a first-degree or a second-degree family history of breast cancer. The only statistically significant finding was a decreased risk relative to never-users of the pill of 0.4 among women with a first degree family history of breast cancer who had used the pill for 6–8 years. To determine whether a latency period alters the results, the researchers analyzed only the data for women who had taken the pill for at least four years, by whether they had completed four years of use within four years prior to enrollment in the study, within 5–9 years or within 10 or more years. However, in none of the latency categories did patients with either a first-degree or a second-degree family history of breast cancer have a relative risk that was significantly different from women who had never used oral contraceptives.

An analysis by months of use before a first full-term pregnancy showed only one statistically significant increased relative risk: Women who had a second-degree relative with breast cancer and who had taken the pill for 4–6 years prior to a full-term pregnancy showed a relative risk of 3.1. The relative risks for both shorter and longer periods of use were all in the range of 0.9–1.3 and were not significant. When women who had completed four years of pill use prior to a first full-term pregnancy were analyzed by latency intervals, the results were all nonsignificant.—*J. Johnson*

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Human Papillomavirus Is Linked to Cervical Cancer in Latin America

Women infected with the human papillomavirus (HPV) are at increased risk for cervical cancer; the risk is also greater for those who have had more than three sexual partners, were 16 years old or less at first intercourse, have never had a Pap smear or have had eight or more live births. Oral contraceptive use and cigarette smoking, however, do not appear to be significant risk factors. These are the major findings of a recent Latin American case-control study of the association between HPV and cervical cancer.[1]

Women newly diagnosed with cervical cancer were enrolled at hospitals in Panama, Costa Rica, Colombia and Mexico.* To be eligible, women had to be between 18 and 69 years of age and had to have resided in the same area as the study site for at least six months. Two age-matched controls were enrolled for each patient. In Colombia and Mexico, both controls were selected from among patients at hospital inpatient services or outpatient clinics. In Panama and Costa Rica, one control was selected from the general population and the second was selected from the hospital that referred the patient. The controls from the community were chosen randomly from census lists of women living in the same county as the patient. The hospital controls were selected randomly from lists of current patients. Women under evaluation for gynecologic or endocrine diseases or diseases related to smoking, those who had had a previous diagnosis of cancer and those who had had a hysterectomy were ineligible as controls and were replaced.

A total of 766 patients with cervical cancer and 1,532 controls were eligible; 759 patients (99 percent) and 1,467 controls (96 percent) agreed to participate. Of this group, only those with sexual experience (759 patients and 1,430 controls) were included in the final sample. Study participants were interviewed and were then given a pelvic examination, during which cervical-swab specimens were taken for analysis of the DNA of HPV.

Viral DNA was detected in 62 percent of the patients and 32 percent of the controls. Infection with HPV 16 or HPV 18 was found to be highly associated with cervical cancer. Once the data were adjusted for the woman's age, number of partners, age at first intercourse, number of live births, interval since last Pap smear and number of years of education, the relative risk increased from 2.1 for women whose test reactions were the weakest (indicating the presence of less HPV DNA) to 9.1 for women with the strongest test reactions. Infection with two other types of papillomavirus, HPV 6 or HPV 11, was less strongly associated with the risk of cervical cancer, with 17 percent of patients and seven percent of controls testing positive. The highest risks were observed among those who were positive for both HPV 16 or 18 and HPV 6 or 11.

Women with four or more lifetime sexual partners had a 1.6 times greater cancer risk than women with one partner; those who first had intercourse before age 17, those who had never had a Pap smear and those who had had eight or more children all had elevated risks of cervical cancer (relative risks of 2.1, 3.0 and 1.4, respectively). After adjusting for these potentially confounding factors, the researchers found that smoking, oral contraceptive use and limited education were not significant risk factors for cervical cancer. Furthermore, no relationship was found between any of the risk factors and the presence of HPV DNA. Although it has been assumed that most genital HPVs are sexually transmitted, the lack of association between sexual behavior and HPV infection suggests that this may not always be the case.

The researchers note that the 32 percent rate of HPV 16 or 18 found among the study controls was higher than rates reported in other large population-based surveys that have used the same testing technique: 2–13 percent among women in Germany, and 6–13 percent among women in Denmark and Greenland. The inclusion in the control sample of women with cervical abnormalities could account for some of this discrepancy. The higher rates observed could also reflect a greater prevalence of HPV infection among Latin American women, who are at exceptionally high risk of cervical cancer. The investigators conclude that their findings provide "circumstantial evidence for the hypothesis that HPV is an etiologic agent of cervical cancer."—*F. Althaus*

*The hospital in Panama represented the entire country; the three hospitals in Costa Rica represented the entire country; the hospital in Bogotá, Colombia, represented only medically indigent patients in that city; and the Mexico City hospital represented patients with social security coverage in that city.

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One-Third of Infants Born To HIV-Positive Mothers Face Illness or Death

About one-third of infants born to women testing positive for the human immunodeficiency virus type 1 (HIV-1) will themselves either die or show evidence of infection with the AIDS virus one year after birth, according to the results of two very different studies—one conducted in Zaire, in which the women had become infected heterosexually,[1] and the other in France, in which two-thirds of the mothers were intravenous drug users.[2] Both studies indicate that AIDS progresses far more rapidly in infants than it generally does in adults. However, infants born to seropositive women in Zaire were far more likely to die during their first year than those in the French study. The researchers conclude that HIV-1 infection may have increased the infant mortality rate in Kinshasa, Zaire, by as much as 15 percent.

Since maternal antibodies to the AIDS virus may persist in an infant for up to a year after birth, researchers in both studies followed infants for at least 12 months. Investigators in Zaire conducted HIV-1 screening among 8,108 women who had given birth at one of two Kinshasa hospitals that serve populations of very different socioeconomic status. The proportion of seropositive women (about six percent) was similar at both hospitals; 85 of the seropositive women already had AIDS, but none reported a history of drug abuse.

For one year, the researchers followed 475 infants born to 466 seropositive women (329 who delivered at a hospital serving predominantly low-income women and 137 who delivered at a hospital serving a higher income population). The investigators also followed a group of 616 controls—infants born to 606 seronegative women who were matched with the experimental group for age, parity and hospital. After one year, 21 percent of the infants of seropositive mothers had died and eight percent of the surviving infants had AIDS, whereas only four percent of the control infants had died. Furthermore, 39 percent of a subsample of 92 infants born to sero-

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positive mothers had evidence of HIV-1 infection 12 months after birth.

Infants born to the 85 women with AIDS were at a clear disadvantage at birth: Thirty-three percent of these newborns weighed less than 2,500 g, compared with only 17 percent of those born to mothers with asymptomatic infection and 10 percent of those born to seronegative control mothers (significant at $p<0.001$). Infants of women with AIDS were also more likely to have a low gestational age at birth, a low ratio of head circumference to height and chorioamnionitis than were infants of the other two groups of mothers. Babies born to seropositive women were also more likely than controls to be premature, to be of low birth weight and to die during their first 28 days. Those born to women with severe symptoms of HIV infection were at even higher risk.

The increased rate of prematurity contributed greatly to the higher overall death rate among infants born to seropositive mothers. During their first year of life, 100 infants born to seropositive mothers died—29 as neonates (62 percent of these were premature). The other 71 infants died later, either from AIDS (34 percent), diarrhea (21 percent), pneumonia (12 percent), meningitis (eight percent) or other causes (25 percent). In contrast, of 23 deaths among infants born to seronegative mothers, only one in eight neonatal deaths was attributed to prematurity. There were 15 postneonatal deaths: Six percent were attributed to prematurity, 27 percent were caused by diarrhea, 20 percent by meningitis, seven percent by pneumonia and 40 percent by other conditions. Of the original 475 infants born to seropositive women, seven were stillborn and another 27 were lost to follow-up. Twenty-seven of the remaining 341 who survived their first year (eight percent) had AIDS.

In an effort to discern the means of perinatal HIV transmission, 92 randomly selected umbilical cord blood samples from infants of seropositive women were tested for seropositivity, and T4-cell counts were performed in 37 of these women. The researchers found that eight of the 19 infants with positive umbilical cord blood cultures died during the first year of life, compared with just 14 of 73 infants with negative umbilical cord blood cultures. In addition, seropositive women with low absolute T4-cell counts were more likely to have an infant with a positive cord blood culture: Six of 18 women with antenatal T4 counts of fewer than 400 cells per cubic millimeter had an infant with a positive culture, while none of the 19 women with antenatal T4 counts above that level did. Further, infants born to mothers whose placenta showed severe chorioamnionitis were approximately twice as likely to have contracted perinatal HIV-1 as were those born to mothers without this symptom.

Mortality rates among children born to seropositive and seronegative mothers at the two hospitals differed considerably, partly because of differences in socioeconomic status and partly because of the higher prevalence of women with AIDS or AIDS-related symptoms at the hospital serving the lower income population. The researchers conclude that if six percent of all women in Kinshasa are, in fact, seropositive for HIV-1, the infant mortality rate in the city may have already increased 15 percent as a result of HIV infection.

In the French study, 117 infants aged 18–24 months were evaluated; these infants were part of a larger group born to 308 seropositive mothers. Twenty-seven percent (32) of the 117 were seropositive for HIV; six of those infants had already died of AIDS. Of the 32 seropositive infants, only two remained without symptoms, while 19 developed severe forms of HIV infection and 11 had nonspecific symptoms. Among the remainder of the 117, 65 percent were seronegative and free of symptoms, while eight percent were seronegative but had symptoms possibly related to HIV infection.

The route of delivery (vaginal or cesarean section) did not appear to have influenced the risk of infection in infants, but the researchers noted that they did not have detailed information about the rupture or status of the membranes at birth or the degree of infants' exposure to maternal blood. Increased risk was associated with breastfeeding, however: Five of the six infants who were breastfed developed antibodies to HIV, compared with 25 of 99 who were bottle-fed (significant at $p<0.01$). (All seropositive mothers had been advised against breastfeeding.) Since so few infants were breastfed, the investigators suggest that larger studies will be needed before an association can be assumed.

Of the 308 mothers who formed the larger study group, 62 percent probably had acquired the infection through intravenous drug use, while 31 percent were thought to have been infected by male sex partners. (Many of the latter group came from Haiti or Central Africa.) Three percent of the women had had blood transfusions before 1985, and eight percent of the women had more than one risk factor.

The infection rate and the ultimate outcome for the 117 infants did not appear to have been influenced by how the mothers had acquired the infection. Furthermore, neither drug-withdrawal symptoms in infants nor active drug use by the mothers during pregnancy altered the risk of perinatal infection. In the French study, there were too few women with symptoms of HIV infection to allow for comparisons based on the clinical status of the mothers.

Although the HIV-infected infants in France did not differ at birth from the noninfected infants (born to seropositive mothers) with regard to weight, height, head circumference or rate of malformations, such characteristics were different among infants of drug-using mothers. Among infants of the same mean gestational age, those whose mothers used drugs were shorter, were of lower birth weight and had smaller head circumferences. Furthermore, nine of the 10 infants with structural abnormalities (including four cases of cleft palate) were born to women who used drugs. In contrast, infants of mothers infected heterosexually were of average height and weight and had a rate of malformations comparable to those of infants in the general population.

The researchers conclude that about one-third of infants born to seropositive mothers can be expected to show evidence of HIV, and that 20 percent of these babies will die by the age of 18 months. The progression of the disease is far more rapid in infants than in adults: The rate of diagnosis of AIDS among HIV-positive, symptom-free adults is about 2–5 percent per year, whereas 59 percent of the HIV-positive infants had severe disease by the age of 18 months. The researchers note that new methods used to detect the HIV genome will improve diagnosis of HIV infection and permit earlier treatment. Although the mortality rate at one year was much lower in this study than in the Zairian study, the combined rate of morbidity and mortality for infants born to seropositive women of about 27 percent was remarkably similar to the rate of 29 percent found in Kinshasa.—*M. Witwer*

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Books in Review

A Guide Through the Population Jungle

Perspectives on Development and Population Growth in the Third World
by Ozzie G. Simmons, Plenum Press, New York, 1988, $32.50, 277 pp.

Reviewed by Walter Mertens

In a recent overview of the economic consequences of population change in the developing world, a member of the "revisionist school" of population studies, Allen Kelley, argued that rapid population growth in developing countries is a toothless (and indeed ornamental) tiger. On the other hand, on asking whether "current qualified and moderate evaluations of the economic impacts of population can be sustained over time,"[1] his prudent conclusion is that "if the history of the population debate can be taken as a guide," these more modest evaluations also will not last. The appearance of Ozzie Simmons's book *Perspectives on Development and Population Growth in the Third World* challenges the revisionist view by successfully demonstrating that when attention is given to the substance of the population debate, the revisionists will be prevented from claiming even a temporary victory.

Perspectives on Development and Population Growth is an impressive work of scholarship and synthesis. Compared with many products in this field, loaded as they often are with jargon, its style is crystal clear. Because of its double qualities of substantive strength and elegant presentation, the book will be extremely useful to five types of persons. The intelligent layman with an interest in the current status of the population field will find it easily accessible. Population scientists will encounter a gold mine of information organized around a framework that artfully combines analysis and synthesis. Scientists from other disciplines will gain a host of insights useful in their own endeavors. Those working in population programs will find plentiful information showing that their work is significant. And, finally, those with a direct interest in population policies will find this book an indispensable tool.

Far more than being simply a discussion of the economic consequences of population growth, Simmons's book offers a set of perspectives on development and population growth in the developing world that combines the insights of many social sciences. It is a fine monument to the resourceful career of the late Ozzie Simmons, and behind it we can recognize the vibrant personality of a man who skillfully combined the talent of the scholar and the practical insights of the field person. Simmons is fondly remembered by many in the developing world who have profited from his innovative programs to use social research for population policy analysis. *Perspectives on Development and Population Growth in the Third World* ensures that his insights will survive his untimely death.

The book consists essentially of two parts. The first three chapters present an admirable overview of important development theories and policies propounded over the last 40 years; their strongest feature is a view of development as a broad social process that cannot be limited to changes in a series of income and output indicators. Chapter 1 gives fundamental definitions and sketches the historical context of development theories, and the second chapter offers an overview of four development approaches. Simmons severely criticizes the modernization model for its simplistic linear view of development as a transition between two diametrically opposed situations—from traditionalism to modernity. The underdevelopment and dependency model is also found wanting, since it shows the circularity and duality characteristic of the modernization models. Although the author views redistribution with growth and the basic needs approach, the two other development strategies, in a more positive way, he does not hesitate to point out some of their weaknesses and incomplete aspects. Finally, Chapter 3 is dedicated to the problems and prospects of equity-oriented development, with its emphasis on equality of income distribution and satisfaction of basic human needs. The equity-oriented approach is deemed to be the most striking feature of current development thinking, at least as it guides international development assistance.

The second part of the book deals with the interrelations between population and development. Chapters 4 and 5 are general in nature, but they do not suffer from the vagueness that is often a serious deficiency in many treatments of population and development. In the first of these chapters the author looks critically at demographic transition theory as a means of integrating population and development, and finds it wanting in exactly the same ways as the modernization model. Simmons follows this with an examination of the possible influence on population growth of equity considerations. The fifth chapter, modestly subtitled "a selective overview," contains precious building blocks for establishing a fruitful integration of population and development, and is especially constructive in underlining the role of cultural and institutional factors in the interplay of population and development.

Chapters 6 and 7 are devoted to sectoral reviews dealing with natural resources, health, nutrition and food, the status and employment of women and education, all in their interrelations with population. These two chapters are the jewels in the crown: Few, if any, current overviews give

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such a clear and concise exposition of our state of knowledge on these topics.

The final chapter concludes with sound advice for future research and action, and also offers a critical treatment of the revisionist position. In contrast to the harmless population tiger depicted by the revisionists, the tiger Ozzie Simmons describes is far from an ornamental one, and its teeth are very real. In fact, there are many tigers afoot in Simmons's development jungle, in that the author recognizes both that development problems are always multifaceted and that their causality can never be reduced to simplistic ideas of the unilateral influence of population or any other factors. Certainly, the ferocity of Simmons's tiger varies according to the terrain and the time of day, but it is very much a tiger with a bite: For Simmons, population problems are serious problems that matter and that, in most developing countries, are not reducible to intellectual gameplaying, as the revisionists would have it.

Ozzie Simmons would not have been very pleased with a book review that omits mention of disagreements and deficiencies, so I will mention a few of these, too. In the review of development theories presented in the first three chapters, distinctions between the analytic and the normative points of view are not always clear. Is the neglect of basic needs, of distribution and of equity a fundamental cause of underdevelopment, or should these problems be considered more as products of underdevelopment—i.e., as policy objectives for development rather than instruments of development policy? Also missing from the overview is any reference to the current disillusionment with economic planning and what this implies for development strategies.

A more serious reservation about these chapters is that although they present an excellent overview, they do not point sufficiently to where development theories and strategies have been deficient in integrating population factors. If more attention had been given to this issue, it would have been easier to build bridges between the first and second parts of the book.

The author's familiarity with the important Latin American writers on development is evident in the first part of the book, but the second part should have featured more references to the strengths and weaknesses of those Latin Americans who have tried to integrate the study of population with new perspectives, such as the importance of survival strategies and their impact on demographic variables. In fact, the book implicitly demonstrates the need for overviews of literature that has been published in other languages widely used for scientific communication* or in languages of countries where population issues have received extensive attention, such as Chinese, Bahasa Indonesia and Portuguese. Simmons's attempt should serve as a model for others to undertake similar syntheses in these languages and to make sure that they are available in English.

I also take issue with some of the author's conclusions with regard to modernization models and to demographic transition theory. Although many of his critical comments are fully justified, I do not think that, by definition, modernization models need be simple linear transitions from one state to another. The same is true for models used to portray the demographic transition. Much richer formulations of these models—versions that are multidimensional and that allow for divergence and change—can be imagined.

Simmons's book has the important virtue of emphasizing that qualitative analysis should be the ever-present twin brother of quantitative analysis and that a full understanding of population issues requires integrated attention to both the macro and micro levels. However, Simmons still expects that somehow it will be possible to find the holy grail—the perfect theory that can answer all of the many current questions. I have my doubts in that regard, although a more unifying view may be possible if history is seen not as the dogmatic precursor of future events but as the source of imaginative new possibilities for the individual and for human society.

However, these criticisms should not in any way be thought to reduce the tremendous value of this book. A few weeks after having heard about the author's death, I happened to be in Mexico City, in one of the city's busiest subway stations. Because of the masses of people, I had to let several trains pass before I could board one myself. As I waited, I could not resist thinking that each time a train's doors slammed shut and the train pulled out, some of the population revisionists' favorite theories were being carried away with it. The revisionists would tell us, for example, that this overcrowding may stimulate subway innovations, that the current annoyance of waiting for a train would eventually be replaced by a utopian system of untroubled movement, that there is a ready supply of models optimistically predicting a future cornucopia of means of transportation, and that many other factors besides overpopulation are responsible for Mexico City's transportation problems.

I do not deny any of these insights, but looking at Mexico City as a whole—and beyond the city, at the country itself—I could not doubt that the quality of human life in Mexico would be much higher if there were a smaller metropolitan area, smaller additions to the nation's total population and a lower rate of natural increase in Mexico's rural areas. I also could not resist thinking that Simmons's book could be a valuable guide in our quest to build a high-quality human environment.

Reference

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*There are several good examples of such overviews. For example, for Spanish, there is R. Urzua, *Social Science Research on Population and Development in Latin America*, Appendix 11 of *Population Policy: Research Priorities in the Developing World, Report of the International Review Group of Social Science Research on Population and Development*, El Colegio de México, Mexico City, 1978.

Submissions Welcome

International Family Planning Perspectives is a peer-reviewed quarterly journal publishing research articles about the developing world that are intended to be of assistance to professionals in the fields of fertility and family planning, maternal and child health and population policy. The editors invite researchers, policymakers and program operators from around the world to submit articles on such topics as contraceptive practice and research; population growth; fertility levels, trends and determinants; childspacing; public policies and legal issues affecting family planning and childbearing; family planning program operation, development and evaluation; information, education and communication activities; sexually transmitted diseases; and reproductive, maternal and child health. Manuscripts should be sent to the address below, and should include the complete affiliation, address, telephone number and Fax number (if possible) of the author with whom we are to correspond.

Manuscripts may be submitted in English, French or Spanish, and are read with the understanding that they neither are under consideration elsewhere nor have been published previously. All submissions are reviewed by the editorial staff and, if deemed of interest, undergo anonymous peer review. Manuscripts not accepted for publication will not be returned. Upon acceptance, all manuscripts will be edited to the extent necessary to conform to the style of the journal. Authors will have two opportunities to review their article after it has been edited. Authors must assign copyright to the journal.

Selected articles appear on an annual basis in the Spanish edition of the journal, *Perspectivas Internacionales en Planificación Familiar*, and in the French edition, *Perspectives Internationales sur le Planning Familial*.

Manuscripts should be typed double-spaced, with all pages numbered and with a title page that includes the names and affiliations (at the time of the work reported) of all authors. Submissions should run no more than 30–35 pages, with no more than 7–8 tables; only one copy need be sent. Manuscripts should include a summary of up to one page in length.

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International Family Planning Perspectives es una revista trimestral que publica monografías sobre el mundo en desarrollo destinadas a asistir a profesionales en las esferas de fecundidad y planificación familiar, salud maternoinfantil y política de población. Invitamos a investigadores y responsables de políticas y programas de todo el mundo a que presenten artículos sobre temas tales como práctica e investigación en materia de anticonceptivos; crecimiento demográfico; niveles, tendencias y determinantes de la fecundidad; espaciamento de los hijos; políticas oficiales y cuestiones jurídicas que afecten la planificación familiar y la fecundidad; aplicación, elaboración y evaluación de programas de planificación familiar; actividades de información, instrucción y comunicación; enfermedades transmitidas sexualmente y salud reproductiva y maternoinfantil. Los originales deben enviarse a la dirección que figura más abajo, debiendo constar en ellos filiación completa, domicilio postal, teléfono y, de ser posible, numero de Fax del remitente.

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